DOCUMENT RESUME

ED 079 499 VT 020 571

TITLE	National Transportation Study 1974. Manual 1: General Information.
INSTITUTION	Department of Transportation, Washington, D.C.
REPORT NO	OMB-04-S-72004
PUB DATE	May 72
NOTE	60p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Airports; Bus Transportation; Financial Support; *Manuals; *National Programs; Parking Facilities; Program Costs; Program Planning; Rail Transportation; Road Construction; Service Vehicles; *Transportation; Vehicular Traffic
IDENTIFIERS	*National Transportation Study

ABSTRACT

This manual is the first of two to be developed by the Department of Transportation to assist in conducting the 1974 National Transportation Study. This second in the series of biennial studies has been designed to build upon the data base and organizational framework established for the 1972 National Transportation Study as well as to develop information and analysis for both the National Airport System Plan and the National Highway Needs Study. In addition, the study has been designed to address critical transportation issues regarding all modes of transportation. The purpose of the 1974 study is to report the state of the nation's transportation system both current and as projected in the future and to recommend programs and policies for improvement. This manual provides general information to State and local government participants regarding the study. Part A describes the information requests to be made of the States and Part B describes the work program requested of each State for completing the 1974 study. A subsequent study will contain more detailed information and coding forms. (Author/MF)

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OMB-04-S-72004

ED 079499

1974 NATIONAL TRANSPORTATION STUDY

Manual I: General Information

U.S. DEPARTMENT OF TRANSPORTATION
Washington, D.C.

MAY 1972

VT020571

ED 076499

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1974 NATIONAL TRANSPORTATION STUDY

MANUAL I: GENERAL INFORMATION

MAY 1972

U.S. DEPARTMENT OF TRANSPORTATION
Office of the Secretary

FOREWORD

During the years 1970 and 1971, Federal, State, and local governments and private industry cooperatively conducted the first in a series of biennial National Transportation Studies. The individual State assessments of capital investment needs and related programs produced as a result of the study has provided the basis for the 1972 National Transportation Study Report currently being documented.

The 1972 Study has also produced the first integrated multi-modal National Transportation System data base. Included in the data base is information on all modes of transportation for all States, the District of Columbia, and Puerto Rico. These data will provide the basis for analyses that go beyond the 1972 Study Report.

The 1972 Study was also instrumental in initiating action toward the establishment of a national organizational framework capable of conducting a coordinated multi-modal, transportation planning and programming process on a national, statewide, and local level. This accomplishment is truly one of the highlights of the study and will have far reaching significance in helping to plan transportation systems for the Nation.

The 1972 National Transportation Study is recognized as a successful project. A great deal of the credit for the success of the effort is due to the excellent contributions of States, local governments, and private sector participants. The 1974 National Transportation Study will continue to rely in large part on the work of State and local government participants.

This manual provides general information to State and local government participants regarding the 1974 National Transportation Study. The manual contains two parts:

Part A – *Introduction to the 1974 National Transportation Study* which describes the study and the information requests to be made of the States.

Part B – *Development of Work Program* which describes the work program requested of each State for completing the 1974 National Transportation Study. The work program is requested no later than August 1, 1972.

A subsequent manual to be distributed in August 1972 will describe in detail the information requests and will contain coding forms, instructions for their completion, and other detailed information relative to the 1974 National Transportation Study.

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PART A—DESCRIPTION OF THE 1974 NATIONAL TRANSPORTATION STUDY

INTRODUCTION

This manual is the first of two to be developed by the U.S. Department of Transportation to assist in the conduct of the 1974 NTS (National Transportation Study). This second in the series of biennial studies has been designed to build upon the data base and organizational framework established for the 1972 National Transportation Study as well as to develop information and analysis for both the National Airport System Plan and the National Highway Needs Study although it is possible that these efforts may require additional information requests from the DOT Administrations. In addition, the study has been designed to address critical transportation issues regarding all modes of transportation.

Purpose of the 1974 National Transportation Study

The purpose of the 1974 NTS is to report the state of the Nation's transportation system both current and as projected in the future and to convey to the Administration and the Congress recommendations for programs and policies aimed at improving the system. More specifically, it is to determine:

- The adequacy of the current transportation system as viewed by Federal, State, and local governments; and private citizens and industry.
- The adequacy of the transportation system which would exist in the future in the absence of major changes in Federal policies and programs.
- The most appropriate Federal programs and policies – within reasonable resource constraints – for bringing about systems and methods of operation which are viewed as more desirable by Federal, State, and local governments; and private citizens and industry.

Department Goals on Which the 1974 National Transportation Study Is Based

The 1974 NTS has been designed to foster the goals of the U.S. Department of Transportation as well as those of the States and urban areas. The goals of the Department are:

- ***Economic Efficiency***
  To provide that mix of transportation alternatives, including modal systems, related facilities, manpower, research and development, etc., which results in maximum benefits such as service, convenience, comfort, capacity, and speed for a given cost.
- ***Environmental Quality***
  To increase the benefits derived from the preservation and enhancement of the environmental, aesthetic, and social attributes of transportation and its surroundings.
- ***Safety***
  To minimize the loss of human life and property and human suffering attributable to transportation-related accidents.
- ***Support of Other National Interests***
  To further all other objectives of the Federal Government whenever they are affected by transportation or whenever the Department can perform a particular task more effectively and efficiently.
- ***Support of Local Objectives***
  To facilitate the process of local determination by decentralizing decision making and fostering citizen participation.

Objectives of the 1974 National Transportation Study

Several national objectives have been established for the 1974 NTS. They are:

- Quantify the Nation's existing transportation system and future planned transportation system in terms of a set of consistent nationwide measures.
- Provide the Secretary of Transportation and the Congress with information upon which to base future national transportation system programs and policies.
- Aid in evaluating the performance of the Nation's existing transportation system in

terms of its contribution to National, State, local, and private sector goals according to a set of desired criteria.

- Aid in identifying the deficiencies in the existing transportation system with respect to National, State, local, and private sector goals.

- Aid in developing appropriate recommendations regarding Federal-aid program authorization levels and structure to facilitate the implementation of recommended plans and expenditure programs.
- Evaluate alternate future transportation systems in terms of performance measures at the National level and encourage similar evaluations at the State and local levels.
- Contribute to the improvement of the overall transportation planning process by encouraging the following activities at all levels of government–

  The continuing coordination of DOT planning grants to facilitate comprehensive multi-modal planning.

  The development of comprehensive transportation plans reflecting State and local goals for both the long range (15–20 years) and the intermediate range (5–10 years).

  The development of intermediate range expenditure programs incorporating the higher priority elements of these plans.

  The development of a systematic data management system for the continued reporting of information regarding transportation system performance.

Scope of the 1974 National Transportation Study

The 1974 NTS has been structured to include all major transportation modes; *i.e.*, Air, Highway, Rail, Water, Pipeline, and new forms of transportation currently under development. Information will be gathered and analyzed in a multi-modal framework.

Participants in the Study include the Federal Government, all States, local governments, metropolitan or urban planning groups, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and American Samoa. Also included as participants are manufacturers and operators of transportation equipment as well as users of transportation facilities.

Comparison of the 1972 and 1974 Studies

Although the 1974 Study has been designed to build upon the work accomplished in the 1972 Study, there are several basic differences that should be noted. The 1972 Study – being the initial effort – was logically data-base oriented. The 1974 Study has been structured to capitalize on this prior work and has begun to shift emphasis from data collection to data analysis. An example of this shift in emphasis is the introduction of the Performance Measure Analysis. These measures have been designed to aid in the assessment of the performance of each individual component of the transportation system, as well as the integrated performance of all components in terms of their effect on both users and non-users of the transportation system. In addition, they have been designed to be useful to States and local areas in establishing a continuing program to monitor the performance of their transportation systems.

An additional new feature of the 1974 Study is the Special Area Analysis under which information is to be reported on the transportation system performance to particular sub-population groups and for particular activities in urban areas of 500,000 population or greater.

Another difference between the two studies is in the future system concepts to be reported. In the 1972 Study, standards of service and design were specified (by the Department, for Highways, and by States and localities, for other modes) against which existing systems could be measured. Projections of future demand were made and deficiencies were noted. Estimates were made of facilities and equipment and their associated costs required to eliminate the deficiencies. These estimates were classified as "Needs." Available funds (based upon several assumptions regarding Federal funding) were allocated to satisfy some portion of stated needs – the result being "Capital Improvement Programs."

The 1974 Study differs from the 1972 Study in that it calls for the development of "Transportation Plans" for 1980 and 1990. These plans should be developed to meet State and local goals and objectives. The only constraints the States are asked to observe is that funds required for plan implementation should not be totally out-of-line with reality and that performance or design standards should

not be overly ambitious or deficient in relation to State and local goals and objectives. Thus, under the 1974 Study approach, the funds necessary to implement the Transportation Plans become an output of the planning process. These data will assist in determining what State and local funds must be made available in addition to projected Federal funds to make some progress toward the programming of projects implementing the plan.

In addition, the 1974 Study calls for the development of a 1980 "Transportation Program." The year 1980 was chosen in order to conform to the typical time period used in State and local capital budgeting and also to allow for the comparison of programs and plans. This program is intended to reflect the types of transportation systems that would exist, given DOT's best estimate of future Federal-aid funds and the best estimates of State and local governments regarding their own available funds. The program will thus serve to measure the anticipated rate of implementation of State/local plans given a realistic assessment of budgets and sources of funds.

Unlike in the 1972 Study, information regarding operating and maintenance costs for all modes will be requested in addition to capital costs for both plans and programs.

Another change from the 1972 Study is in the role of the Department's Secretarial Representative and the IPG (Intermodal Planning Group) in each of the 10 Federal Regions. The Secretarial Represenative represents the Secretary of Transportation at the Regional level and plays a key role in coordinating Departmental programs and policies in the field. The IPG is composed of the Secretarial Regional Representative and administration field office planning personnel who have the responsibility for coordinating Departmental planning grant programs. Its function is to coordinate the planning grant programs of the several modes particularly at the metropolitan level. In the 1974 Study the Secretarial Represenative will play a coordinative role in the field. Using the technical advice of the IPG it will be his responsibility to review the Study work programs and progress reports of the States in his region and to keep DOT Headquarters informed of the progress of the Study.

As in the 1972 Study, members of the technical staff of the Office of Systems Analysis and Information will provide headquarters support for the field work. An individual from the Office of Systems Analysis and Information has been assigned to provide guidance to each region. A list of the Federal Regions, the States located in each, the Secretarial Representatives, and the members of the Headquarters staff assigned to provide guidance to each region can be found in Appendix K and L.

Format of the Manual

This General Information Manual (Manual I) is the first of two to be developed by the Department. It is divided into Parts A and B. The remainder of this part describes the overall *three-phase* 1972 NTS. It includes, among other items, discussion relative to the information requests to be made of the States, the organization established for conduct of the study, funds available to the States to support their efforts and a study schedule.

Part B of this manual provides detailed guidelines for the completion of Phase 1 of the Study; *i.e.*, Development of State Work Program. This phase is to be completed by August 1, 1972. In August 1972, the Department will distribute Manual II, the Procedures and Data Forms Manual. This Manual will contain the details necessary for the States to complete Phases 2 and 3 of the 1974 Study.

Both Manuals I and II are addressed primarily to State, local government, and urban planning group participants of the Study.

OVERVIEW OF THE STUDY

General Information

The 1974 NTS has been designed to build upon the organizational framework and data base established as a result of the 1972 Study. Furthermore, it has been designed such that the information to be provided results from and is useful in the State and local planning process.

The Study has also been designed to incorporate and be as consistent as possible with data requirements of other Federal programs. For example, the airport inventory requested incorporates substantial amounts of information gathered by the FAA (Federal Aviation Administration) in the National Airport System Plan submittals and Airport Facility Records. Likewise, the highway information requested includes considerable material submitted to the FHWA (Federal Highway Administration) for preparation of their annual Highway Statistics document as well as for the Highway Needs Studies. Where information such as the above is already being reported, duplication will be

minimized. In general, it is expected that the products from planning efforts supported by the Department's administrations through their planning grant and assistance programs will be used and coordinated in this study.

In addition, certain information gathered by Federal Agencies and considered useful to State and local agencies will be provided to the States for use in the 1974 Study and other planning work. This would include:

- Data compiled and published on a regular basis by FHWA in the booklet "Highway Statistics;" data regarding airport physical plant collected by FAA; and, the rail waybill sample published by the OST (Office of the Secretary) and the FRA (Federal Railroad Administration).
- Data collected as part of the FHWA 1970 Functional Classification and Needs Study.
- Information obtained in the course of special studies of specific issues carried out by the different components of the Department.
- Information obtained from surveys of the private sector, including operators of transportation services such as railroads and airlines; the major industrial users of transportation services such as shippers of raw materials or finished products; and, manufacturers and designers of transportation equipment such as buses, aircraft, and control equipment.
- Information regarding methodologies of particular use in the planning process.

As an example of how the different sources of information complement each other, consider the air transport mode. The performance, size, capacity, and other aircraft features are directly affected and determined to a great extent by the aircraft manufacturers as well as the airlines. The terminal requirements are of concern to local communities and the State as well as the FAA and the airlines. The control of aircraft in flight is a direct responsibility of the FAA. The award of routes is the responsibility of the CAB (Civil Aeronautics Board).

The responsibility for the functions outlined in the above example overlap between Federal, State, and private agencies. To ease the reporting burden, the Department will tap the sources most capable of developing the required additional information and make every effort to provide the States with any information useful in State or metropolitan planning work. The exact nature of the additional information to be collected and special studies to be undertaken has not yet been identified in full. It should therefore be recognized that this manual does not cover all information to be reported as a result of the 1974 Study but only that information to be generated as a result of the State planning and programming process.

Planning-Programming Process

Considering the objectives of the 1974 NTS, a generalized planning-programming method of approach may be described. The Department recognizes, however, that State planning-programming processes may differ and does not desire to impose a specific method of approach. The method of approach described should therefore be reviewed, evaluated, and adjusted as necessary to conform to the existing State planning-programming process and at the same time meet the reporting requirements of the 1974 Study.

Before describing the generalized planning-programming process visualized for the 1974 Study, a summary of plans and programs may be helpful–

> ***Transportation plans*** are descriptions of a transportation system designed to provide the best mix of transportation services, to optimize system performance, and best meet goals and objectives – within reasonable cost levels. DOT requests the reporting of Plans for 1980 and 1990.
>
> ***Transportation programs*** are descriptions of a transportation system investment over some time period resulting from allocation of available funding to best meet goals, objectives, and performance criteria. DOT requests the reporting of the 1980 Program that the States expect to use for implementing their transportation system whether it results from a planning-programming process as described below or was established in some other fashion.

A generalized flow description of the planning-programming process is shown in Figure 1. The process envisions the development of a 1990 Plan considering the goals and objectives of the local areas and each State as well as an evaluation of the performance of alternate systems. Within the 1990 Plan a subset of transportation facilities to serve 1980 demand, to show appropriate progress in meeting long-range goals and objectives, and to optimize

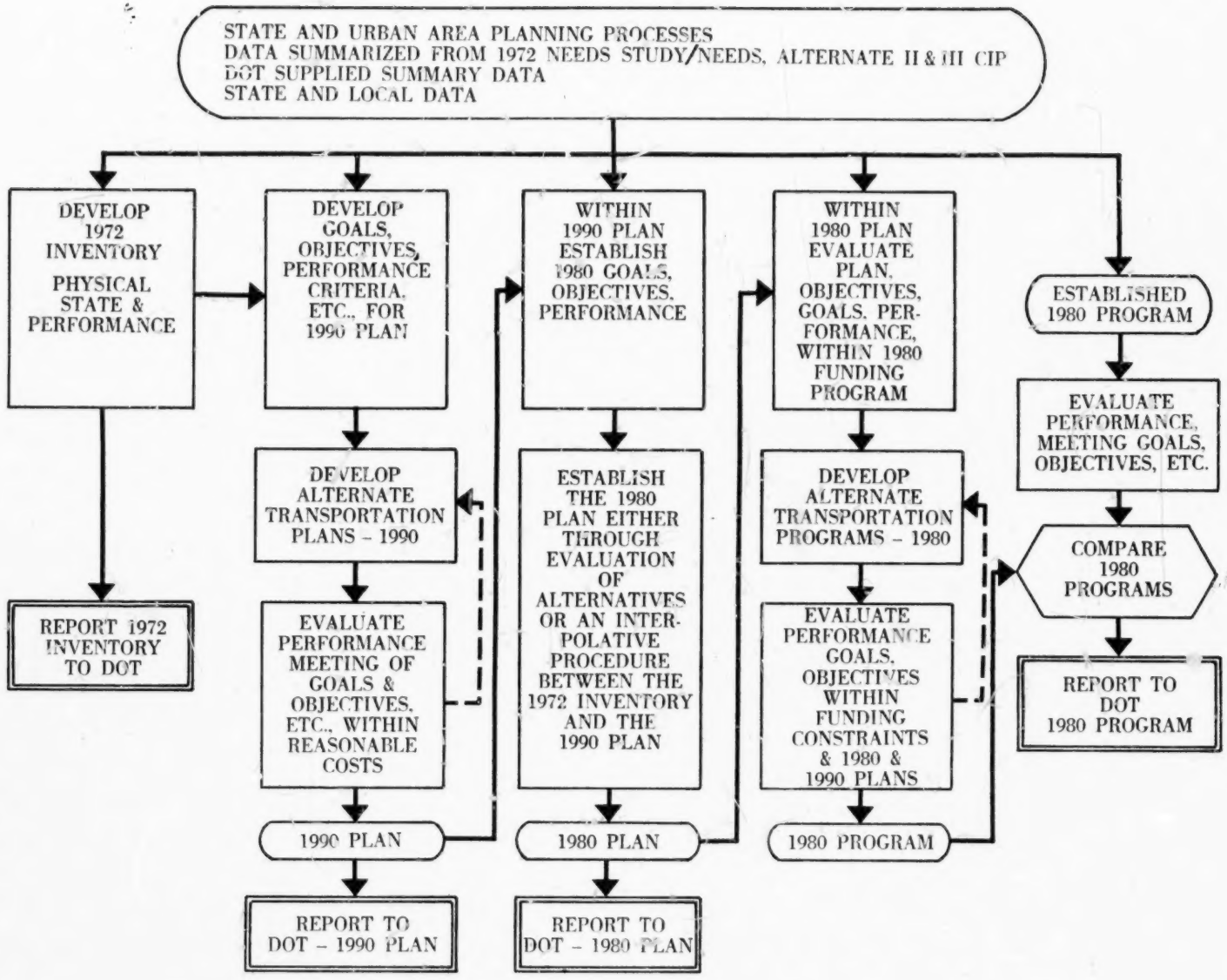
STATE AND URBAN AREA PLANNING PROCESSES
DATA SUMMARIZED FROM 1972 NEEDS STUDY/NEEDS, ALTERNATE II & III CIP
DOT SUPPLIED SUMMARY DATA
STATE AND LOCAL DATA
DEVELOP 1972 INVENTORY
PHYSICAL STATE & PERFORMANCE
REPORT 1972 INVENTORY TO DOT
DEVELOP GOALS, OBJECTIVES, PERFORMANCE CRITERIA, ETC., FOR 1990 PLAN
DEVELOP ALTERNATE TRANSPORTATION PLANS – 1990
EVALUATE PERFORMANCE MEETING OF GOALS & OBJECTIVES, ETC., WITHIN REASONABLE COSTS
1990 PLAN
REPORT TO DOT – 1990 PLAN
WITHIN 1990 PLAN ESTABLISH 1980 GOALS, OBJECTIVES, PERFORMANCE
ESTABLISH THE 1980 PLAN EITHER THROUGH EVALUATION OF ALTERNATIVES OR AN INTERPOLATIVE PROCEDURE BETWEEN THE 1972 INVENTORY AND THE 1990 PLAN
1980 PLAN
REPORT TO DOT – 1980 PLAN
WITHIN 1980 PLAN EVALUATE PLAN, OBJECTIVES, GOALS, PERFORMANCE, WITHIN 1980 FUNDING PROGRAM
DEVELOP ALTERNATE TRANSPORTATION PROGRAMS – 1980
EVALUATE PERFORMANCE GOALS, OBJECTIVES WITHIN FUNDING CONSTRAINTS & 1980 & 1990 PLANS
1980 PROGRAM
ESTABLISHED 1980 PROGRAM
EVALUATE PERFORMANCE, MEETING GOALS, OBJECTIVES, ETC.
COMPARE 1980 PROGRAMS
REPORT TO DOT 1980 PROGRAM

FIGURE 1. IDEALIZED PLANNING–PROGRAMMING PROCESS

1980 performance is determined and results in the 1980 Plan. Considering the 1980 Plan and available funding and related constraints, a determination is made of the mix of facilities which optimizes the 1980 system performance within these constraints. This is known as the 1980 Program. While the process described and the data items requested in the Appendix are heavily oriented toward investment and development actions, State and local agencies are strongly encouraged to consider and include non- and low-capital alternatives as complements or substitutes for physical development. Options such as regulatory modernization, pricing policies, encouragement of "carpooling" or transit usage, should be considered as part of the plan and program as methods of increasing the efficiency of the transportation system. Such options should be described in the narrative along with estimates of their impact upon performance, investment levels, and programs.

An alternative to the above approach, which may be appropriate in some cases, is to start the process for meeting the requests of the 1974 NTS by evaluating an already established 1980 (or adjusted to 1980) Program. The performance of the programmed system is evaluated, and if deemed appropriate, adjustments are made. *The programmed system to be implemented is reported to the DOT.*

A 1980 Plan is developed by determining the system providing a desirable level of performance considering the goals and objectives established – within reasonable cost levels. This may be some increment of a system above the programmed system. Following this approach, the 1990 Plan may be established by developing increments to the 1980 Plan providing alternate levels of service, meeting longer range goals and objectives, being within reasonable cost levels, and evaluating these to determine the 1990 Plan to be reported.

The Department does not recommend this approach except as an expedient, since the Department believes long-range planning should precede and in a sense guide the development of shorter range transportation programs. Regardless of the specific procedures used, it is expected that maximum use will be made of past and current comprehensive and transportation planning efforts.

The information to be reported to the Department is shown within the double-lined boxes in Figure 1. It includes information relative to the 1972 Inventory, 1990 Plan, 1980 Plan, and 1980 Program. Further discussion of these four major data elements follows.

The 1972 Transportation Inventory – will consist of a description of the physical state and performance of the transportation system as of January 1, 1972, as well as operating costs and low- and non-capital programs which are in operation.

The 1990 Transportation Plan – will consist of a physical description of the 1990 Plan in the same terms as the 1972 Inventory, the performance of the 1990 Planned System and the capital cost in constant 1971 dollars for the period January 1972 to January 1990. The plan should also include information on operating cost in constant 1971 dollars for the year 1989 and any low- or non-capital programs which are pertinent to the performance of the transportation system. The plan should be based upon a determination of the level of performance desired, and the provision of a system which strives to attain the level of performance desired within reasonable costs. Although performance measures are to be reported, no specific levels of performance or other criteria to be used to establish the plan will be provided by the Department, since the DOT does not require the use of uniform national levels of service or performance criteria as the basis for plan development for the 1974 NTS. The DOT wishes to foster local initiative in evaluating alternate goal-based transportation systems suited to the particular topographic, demographic, and political features peculiar to each State and local area. To aid in development of the 1990 Plan, the DOT will summarize and distribute to each State, its 1972 National Transportation Study "Transportation Needs," submittal for the period 1970 – 1990.

The 1980 Transportation Plan – will consist of a physical description of the 1980 Plan in the same terms as the 1972 Inventory, the performance of the 1980 Planned System and its capital costs in constant 1971 dollars for the period January 1972 to January 1980, and operating costs in constant 1971 dollars for the year 1979. Low- and non-capital elements which are part of the 1980 Plan should be reported. The same comments relative to performance and system criteria for the development of the 1990 Plan apply here. The Department will provide each State with a summary of their needs submittal for the period 1970 – 1980 (1972 Study submittal) for use in developing the 1980 Plan. The 1980 Plan should be consistent with the 1990

Plan in that it represents the appropriate point of development as of 1980 which would be necessary to complete the 1990 Plan in an orderly fashion. It is not intended that a major planning effort be undertaken to develop the 1980 plan if one does not exist. Rather, an interpolation procedure should be considered between the Inventory and the 1990 Plan.

The 1980 Transportation Program – will consist of a physical description of the 1980 programmed transportation system in the same terms as the 1972 Inventory, the performance of the 1980 programmed system, and the capital costs of the system (January 1972 to January 1980) in constant 1971 dollars, as well as operating costs for the year 1979. In addition, information will be requested regarding sources of funds to implement the Program. Unlike the 1972 National Transportation Needs Study, there will be only one Federal-Aid Funding assumption for the period January 1972 to 1980. This will be based upon the DOT best estimate of funds available and program allocation. This information will be contained in the detailed instruction manual to be distributed in August 1972. To aid in this program development, a summary of each State's reporting of Capital Improvement Programs under Alternatives II and III of the 1972 National Transportation Needs Study will be forwarded by the DOT in September of 1972. This information (Capital Improvement Program Summaries – Federal Funding Alternatives II and III) will be for the period 1974 – 1978 and 1979 – 1990. The 1980 Program should also include reporting of any low- and non-capital elements which are anticipated to be implemented.

In the planning programming process described, the 1980 Program evolves from an establishment of the 1990 Plan and the 1980 Plan, and is a step in the implementation of the 1990 Plan. Where a State 1980 Program (or a short-range program that can be adjusted to 1980) exists, the program which evolves from the planning-programming process should be compared and evaluated against the established 1980 Program, and a decision made as to the 1980 Program to be implemented. This may be the already established 1980 Program, the 1980 Program resulting from the planning-programming process described, or some adjustment of these. In any case, it is most important that the 1980 Program to be implemented in the State be reported to the DOT in terms of the 1980 Physical State, the performance of the system, and the costs of implementation in constant 1971 dollars (January 1972 – January 1980), and the sources of funds.

The Department recognizes that in many cases long-range plans and short-range programs already exist and have been officially adopted by public officials as a result of a planning process. In such cases, the Department does not intend that such plans and programs be substituted by any new plan or program generated through the 1974 Study, unless it is felt by State and local governmental participants that an updating is warranted because of obsolescence of the assumptions underlying the plan or program or besause of changes in policy. Similarly, information, plans, and programs developed as part of the 1972 Study should be reviewed for any changes in policy or conditions which would require updating or re-appraisal. If such substantial changes are made, it is desirable that official approval be obtained prior to submittal to the Department. If time does not permit this official approval, a review and concurrence by governmental officials is recommended. The status of the plans and programs should be described in the narrative report submitted. Where minor adjustments are made, such as to change plan or program years to 1980 or 1990 for reporting to the Department, official review or approval is not considered necessary. The plans and program submitted will be described in terms of physical state, performance, cost, and (for the 1980 Program) source of funds, and reported on the forms to be supplied with Manual II.

The 1974 NTS has been structured as a three-phase effort. A summary description of the major work elements to be accomplished and information to be reported in each phase follows:

Phase 1

Work Element #1 – Develop State Work Program as described in Part B of this Manual.

Phase 2

Work Element #2 – Develop 1972 Inventory–

- Physical state of the transportation system existing as of January 1, 1972.
- Low- and non-capital programs existing as of January 1, 1972.
- Transportation system operating costs for the year 1971.
- Peformance of the transportation system existing as of January 1, 1972.

Work Element #3 – Develop 1990 Plan–

- Description (in terms used for 1972 physical state) of the 1990 transportation system plan resulting from the transportation planning process.
- Performance of the 1990 transportation system plan.
- Description of low- and non-capital programs which are part of the 1990 Plan.
- Operating costs in constant 1971 dollars for the year 1989.
- Costs to develop the 1990 planned system (1972 – 1990) in constant 1971 dollars.

Phase 3

Work Element #4 – Develop 1980 Plan–

- Description of the 1980 transportation system plan resulting from the transportation planning process.
- Performance of the 1980 transportation system plan.
- Operating costs for the year 1979 in constant 1971 dollars.
- Description of low- and non-capital programs which are part of the 1980 Plan.
- Costs to develop the 1980 planned system (1972 – 1980) in constant 1971 dollars.

Work Element #5 – Develop 1980 Program–

- Description of the 1980 programmed transportation system.
- Performance of the 1980 programmed transportation system.
- Description of low- and non-capital elements which are part of the 1980 programmed system.
- Costs to develop the 1980 programmed system (1972 – 1980) in constant 1971 dollars.
- Operating costs for the year 1979 in constant 1971 dollars.
- Sources of funds (1972 – 1980) anticipated to finance the programmed system.

Work Element #6 – Conduct Special Area Analyses–

- For urbanized areas over 500,000 population.
- Sampling of analyses units.
- Reporting of stock information for analyses units (*i.e.*, population, employment, miles of highway) and dynamic inter-area measures (*i.e.*, distance, travel time by mode).
- Reporting for 1972, 1980 Plan and Program, and 1990 Plan if possible. Otherwise, for study base year and future plan.

PERFORMANCE MEASURES

The 1974 NTS will introduce to the National Transportation Planning Process the development and use of transportation system Performance Measures. These measures – although new to the national planning process – are not new in concept to the comprehensive transportation planning process underway in the States and urbanized areas. For example, many areas currently develop measures such as average travel speed, number of accidents per vehicle mile of travel, number of housing units displaced for construction, etc. These assessments can rightfully be classified as measures of the performance of the transportation system as viewed by both users of the system (average travel speed) and the public at large (number of housing units displaced).

The 1974 Study has been designed to build upon the concept of evaluating transportation systems in terms of specified measures of performance and to extend the concept to be:

- ***Multi-Modal***—the performance measures to be developed will encompass the air, highway, rail, and water components of the transportation system.
- ***Comprehensive***—the performance measures to be developed will assist in measuring the performance of each component of the transportation system in terms of service, usage, environment, accessibility, mobility, safety, and economy afforded its users, as well as measuring the impact of the transportation system on non-users of the system.
- ***Timely***—performance measures to be developed will assist in providing insight into important transportation issues currently facing the Nation. Examples include the degrees to which different groups of citizens are afforded adequate transportation service and the effect of the Environmental Protection Agency's Clean Air Standards for 1975 on proposed transportation systems. This insight will be provided in part as a result

of "special area analyses" described in a later portion of this manual.

Contained in the Appendix of this manual is a list of performance measures to be developed. It will be noted that they vary by characteristics of the area. The variation between areas, which is explained in greater detail in subsequent sections of this manual, is intended to reduce the reporting burden.

The method of approach to be employed is:

The performance measures listed are to be developed for the existing transportation system (1972 Inventory). These measures should be thought of as a "benchmark." Similar measures should be developed and used in structuring the 1990 Transportation Plan; under the idealized planning process the performance measures developed for a proposed 1990 Plan would be compared to the 1972 Inventory to assist in determining if the change in the performance of the transportation system justifies the investment. If not, the Plan Development Phase should continue until the increase in the performance of the system and investment in the system are brought into line. Similar work would then follow relative to the 1980 Plan and Program.

Information Requests

This General Information Manual does not contain the forms and detailed instructions for reporting the requested information. These forms and instructions will be contained in Manual II, "The Procedures and Data Forms Manual," to be distributed in August 1972. This Manual does contain descriptions of physical state, performance measures, and cost items to be requested in the detailed instruction manual. As indicated in the Appendix the DOT will provide suggested alternative methodologies for developing certain data items which may not be readily available from current planning programs. They will be included as part of Manual II.

The information requested can be grouped into the following broad categories:

Phase 1 – Development of State Work Program.

Work Element #1 – See Part B of this Manual.

Phase 2 of the 1974 NTS.

Work Element #2 – 1972 Inventory—physical state, performance, and operating costs of the transportation system as of January 1, 1972. The transportation system to be reported will include:

The Highway System.
The Urban Public Transportation System.
The Airport System.
Parking Facilities.
The Marine Terminal, Waterway and Harbor System.
The Intercity Bus System.
The Intercity Trucking System.
Other Transportation System Components.

Work Element #3 – 1990 Transportation Plan —physical state and performance of the 1990 Transportation Plan in the same terms as the 1972 Inventory. In addition, total plan costs (1972 – 1990) in constant 1971 dollars will be requested including operating cost for the year 1989. These costs will *not* be reported by funding source (Federal-aid, State, etc.) but by major area (new construction, maintenance, etc.) as shown in the Appendix.

Phase 3 of the 1974 NTS

Work Element #4 – 1980 Transportation Plan—physical state, performance, and capital and operating costs of the 1980 Transportation Plan as for the 1990 Plan, except costs will be for the years 1972 – 1980 and the year 1979.

Work Element #5 – 1980 Transportation Program—physical state, performance, and capital and operating costs of the 1980 Transportation Program as for the 1980 Transportation Plan. In addition, sources of funds will be requested.

Work Element #6 – Special Area Analyses—information regarding specific subareas of urbanized areas greater than 500,000 in population for study base year and plan year as a minimum. Preferably, reporting should be for 1972 Inventory year, 1980 Plan and Program year, and 1990 Plan. The extent and details of this work element will be dependent upon the outcome of pilot investigations to be undertaken by the Department.

The physical state, system performance, cost, and source of funds information outlined above will be requested for one or more of the following four major geographic units:

Urbanized Areas – Areas which are defined as urbanized by the 1970 Census; however, the geographic area to be considered in reporting should

include that area expected to be urbanized in 1990. Generally, a separate report will be required for each such area. Certain information will not be requested for urbanized areas if less than a certain size. For urbanized areas with greater than 500,000 population, all information is to be reported separately for the central city and the remainder of the urbanized area.

SMSA (Standard Metropolitan Statistical Areas) – Areas which are officially designated as SMSA's by the 1970 Census. Information will be requested on capital and operating costs and sources of funds only.

Small Urban Areas – Areas which have a population between 5,000 and 50,000 as of the 1970 Census. Only State aggregates of such areas are requested but grouped separately for areas between 5,000 and 25,000 and 25,000 and 50,000. Again, expected 1990 urban boundaries should be observed. For those reports requested for SMSA's, and aggregate small urban areas, reporting (outside of SMSA's) will also be requested.

Rest of State – Area within each State outside of 1990 urbanized and small urban boundaries. Only one aggregate report of all such areas will be requested from each State. For those reports requested for SMSA's, a "rest of State report" (outside of SMSA's and small urban areas) will also be requested.

In addition, certain classes of information which are meaningful only in a statewide sense will be requested only as they apply to the entire State.

The Department has made an effort to structure the reporting requests such that the reporting burden is minimized and the data reported are meaningful. For this reason, the information requests vary by reporting area. The following is a summary of the information requested for each area by major transportation mode.

Highways – The information listed in Appendix A will be requested separately for each urbanized area, and aggregated for small urban areas between 5,000 and 25,000 population, for small urban areas between 25,000 and 50,000 population, and for the remainder of the State. In addition, the cost information listed in Appendix A will be requested for each SMSA, and aggregated for small urban areas between 5,000 and 25,000 population, for small urban areas between 25,000 and 50,000 population, and for the remainder of the State. Source of Funds information listed in Appendix J is requested on an individual SMSA basis as well as for aggregated small urban areas and rest of State.

Urban Mass Transportation – The detailed inventory and performance information listed in Appendix B will be requested only for urbanized areas. For the two categories of small urban areas, only aggregate cost information will be requested. Aggregate capital and operating costs are also requested for each SMSA as well, and for each of the two categories of small urban areas as well as the Source of Funds data (Appendix J).

Airports – The information requested for airports (Appendix C) will vary by community which the airport serves and its functional role in the system. Total capital and operating costs will be asked for all airports serving urbanized areas. Such costs will be reported for urbanized areas, SMSA's, and aggregated for small urban areas and rest of State. Sources of Funds data (Appendix J) is requested for each SMSA, as well as for aggregated small urban areas and rest of State. For those States and communities which will have completed a State Airport System Plan by February 1, 1973, under FAA's Airport System Planning Grant Program, most of the information necessary to fulfill the data requests for the 1974 National Transportation Study will be available. Adjustments to report the information for the years established for this study, however, will be necessary (1972 Inventory, 1980 and 1990 Plans and 1980 Program). The following is the level of detail requested:

- Primary system airports in large hubs: information regarding airport access, and information regarding landing field and terminals on an individual airport basis.
- Air carrier served airports and reliever airports in hubs and/or serving urbanized areas of 250,000 or more population: as above, except for airport access.
- Other airports in a State Airport Plan: very limited information regarding location, role in the system, and aggregate development cost.

Marine Terminals – The information listed in Appendix E will be requested on an individual port basis for those ports handling more than 500,000 tons of cargo in 1972. For ports handling less than this amount, only total cost information

is requested for individual urbanized areas, aggregated small urban areas, 5,000 – 25,000 and 25,000 – 50,000, and total rural areas. Total operating and capital costs are requested for each SMSA and aggregate small urban areas, and rest of State outside of SMSA's.

Information regarding parking, intercity bus service, intercity rail service, bus terminals, rail terminals, trucking terminals, and other facilities, equipment, and services not accounted for in the above list should be reported if the State or any component of the State anticipates public participation in their operation and finance, or determines that there is a public need or important interaction with other publicly sponsored facilities, or is otherwise interested in including such facilities, equipment, and services as part of its comprehensive inventory, plan, or program.

It is recognized from the experience in the 1972 Study that such information is often not readily available to State or urban transportation planners and therefore the Department does not wish to burden a State with information and analysis which it is ill prepared to obtain and find useful in its planning program. The information requested for these other transportation facilities is of an extremely aggregate nature. The Department requests that each State consider the extent to which it will report the information and note this in its work program to be submitted. In any case, the State will be requested to discuss in its Narrative Report, its policy with respect to these other transportation modes regardless of whether it elects to report the information.

The information requests below and data items shown in the Appendix are suggested for use if information for these types of transportation systems are to be reported. Use of the forms will insure consistent reporting of such information between States. Operating and capital costs are requested for these modes on an individual urbanized area basis and for aggregate small urban and rest of State outside of urbanized areas. In addition, total operating and capital costs are requested for each SMSA and for aggregate small urban and rest of State areas outside of the SMSA. Physical state information is requested for each urbanized area with 250,000 population or greater, as shown in the Appendix.

Parking Facilities – The physical state information listed in Appendix D is requested on an urbanized area basis for those urbanized areas with more than 250,000 population. Cost information is requested also for each urbanized area, each SMSA, for total of small urban areas 5,000 – 25,000 and 25,000 – 50,000, and for rest of State as shown in Appendix D.

Bus Terminals (Intercity) – The physical state information listed in Appendix F will be requested on an urbanized area basis for those areas with more than 250,000 population. Cost information will be requested for each urbanized area, each SMSA, for total of small urban areas 5,000 – 25,000 and 25,000 – 50,000, and for rest of state as shown in Appendix F.

Railway Terminals (Intercity) – Same as for bus terminals. See Appendix G.

Trucking Terminals (Intercity) – Same as for bus terminals. See Appendix H.

Other Transportation System Components – For reporting of other transportation system component information for which a specific request has not been provided, each component is to be described in the Narrative and costs are to be reported as shown in Appendix I.

Sources of Funds – For the *1980 Program*, the information listed in Appendix J is requested for each of the following major modal programs:

The Highway System.
The Urban Public Transportation System.
The Airport System.
The Marine Terminal, Waterways and Harbor System.
Parking (if reported).
The Intercity Bus System (if reported).
The Intercity Rail System (if reported).
The Intercity Trucking System (if reported).
Other Transportation System Components (if reported).

The categories are to be reported for the major program as a whole by each SMSA and for the rest of State but *not* for individual cost elements.

Sources of capital funds should be reported separately from sources of operating funds. The capital funds apply to the 8-year period 1972 thru 1979 and the operating funds for the years 1971 and 1979 separately.

Special Area Analysis – The Department will request special area information from all urbanized areas with a 1970 population of 500,000 or greater.

These data will be used by the urbanized areas to develop area-wide measures of the performance of each individual component of the transportation system and the integrated performance of the entire transportation system. They will also be used to develop additional insight into emerging transportation issues such as:

- The impact of the Environmental Protection Agency's Clean Air Standards for 1975 on proposed plans and programs.
- The degree to which different groups of citizens are afforded adequate transportation service.
- Accessibility to major traffic generators such as the central business district and the airport.

The specific information to be collected and the precise performance measures to be developed will be discussed in detail in Manual II. This second manual will also provide guidance on alternative methodologies for developing the requested information.

The Department will undertake a trial special area analysis study in several urban areas as a means of gauging the expected level of effort required to establish data items which can most conveniently be reported by existing planning agencies and to develop alternative methodologies.

To assist the State in the development of its work program, a brief description of the approach being structured follows.

The special area analysis will assume the existence of some minimal level of transportation analysis and data manipulation capability. Each affected urbanized area will be requested to employ a sampling technique (to be developed by the DOT) to isolate analysis units (traffic zones) which may be representative of—

- *Major Community Services* – for example – medical centers, university complexes, cultural centers, etc.
- *Major Transportation Terminals* – for example – airport, truck, rail, water, other, etc.
- *Major Centers of Activity* – for example – employment, shopping, population, other, etc.
- *Characteristics of Citizens* – for example – income, race, age, other, etc.

The analysis units selected are to be reviewed by the DOT prior to the development of the requested data.

The selected analysis units will be viewed as a statistically reliable sample of the urbanized area complex. For each analysis unit, the DOT will request the reporting of:

- *Intrazonal Stock Information* – for example – population, employment, land area, capacity – miles of highway, seat-miles of transit, transportation-related pollutants, etc.
- *Interzonal Information* – for example – person trips, vehicle trips, goods movement, distance, time, cost, etc.

The DOT will also request the reporting of the analysis and use of these data in the development of performance measures designed to assist in the evaluation of the performance of the entire transportation system (for example – the accessibility to recreational facilities afforded by all modes); the performance of the individual components of the transportation system (for example – the travel time to the CBD (central business district) via the public transit mode); the performance of the transportation system in serving different groups of citizens (for example – the accessibility to employment opportunities afforded the disadvantaged relative to other groups of citizens), and other such measures deemed significant with respect to National Transportation issues and judged attainable as a result of the urban planning process and the trial program conducted by the Department.

The Department encourages the reporting of special area information and analysis in terms of the 1972 Inventory, the 1990 Plan, the 1980 Plan, and the 1980 Program. It is anticipated that an interpolation technique may be used by the urbanized area study groups to develop these data from base-year and forecast-year data previously developed as a result of comprehensive planning efforts. If the development of the requested data for the years specified is judged overly difficult, the Department will accept special area data and analyses for only the base-year and the forecast-year used by the transportation study.

Non- and Low-Capital Alternates—For each urbanized area qualitative information is requested on the existence and plans for a variety of non- and low-capital operating programs or policies. Responses should indicate whether each of the alternatives listed below is in practice as of the 1972 Inventory and whether each is included

for implementation as part of the 1980 Plan and Program and the 1990 Plan.

The following alternatives should be reported on:

1. Staggering of work hours.
2. Measures to encourage carpools.
3. Banning private automobiles from the CBD.
4. Raising tolls on toll bridges and tunnels during peak hours.
5. Lowering tolls on toll bridges and tunnels during off-peak hours.
6. Increasing CBD daytime parking rates.
7. Raising transit fares during peak hours.
8. Lowering transit fares during off-peak hours.
9. Unrestricted entry of taxicabs.
10. Unrestricted entry of jitneys.
11. Reserved lanes for buses.
12. Restrictions on curbside loading and unloading in congested areas.
13. Evening delivery by trucks in downtown areas.
14. Other (describe).

Respondents are encouraged to provide additional information in either narrative and/or qualitative terms describing those alternatives presently in operation or planned. This additional reporting should be included as part of the Narrative Report.

Railroad Relocation and Line Abandonment and Improved Integrated Freight Terminal Development – Treatment of intercity railroad terminals and facilities is somewhat unique inasmuch as planning and programming decisions are made within the private sector with a traditional lack of involvement by urban or State transportation planning agencies. However, it is becoming increasingly evident that the railroad system and terminal facilities impact heavily upon the performance of the total urban area and statewide transportation system, and further, that planning and programming decisions for the public modes must be consistent and compatible with decisions made by the railroads. Three major issues which urban communities and State agencies will be facing with increasing interest are:

1. The potential benefits of relocating existing railroad facilities and terminals which presently are disruptive to the transportation, land development, and environmental performance of urban areas.
2. The location and design of railroad terminals which are integrated with the intercity and local transportation systems as well as the terminal and inter-modal plans and requirements of the other transportation modes.
3. The potential for either improving certain portions of the intercity railroad system or the plans which the railroads may have for abandoning service over certain lines.

Existing transportation plans and programs should be re-examined with respect to these three issues and modified where recommended changes to the railroad facilities would result in more effective transportation service and overall economic and environmental conditions. The railroad terminal and facilities information requested in Appendix G should reflect consideration of these alternatives.

Other Reporting

In addition to the information requests previously described, the Department will request other reporting of each State. This reporting will include:

State Work Program – See Part B of this Manual.

Monthly Progress Reports – These reports will describe progress made in relation to the work program established. The first of these reports will be due September 1, 1972, and will describe progress during the period July through August 1972. Further instructions regarding these reports as well as a proposed format will be contained in Manual II. However, it is intended that these progress reports be short and factual.

Narrative Report – This report is intended to provide the State and local areas an opportunity to discuss factors relevant to the 1974 Study not specifically accounted for in the other information compiled and submitted to the Department. It should contain any information the State and its participant organizations feel the Department should be aware of in interpreting the reported data. The Narrative Report should include but not necessarily be limited to discussion relative to the following—

1. Discussion relative to the planning-programming process used in developing the 1972 Inventory, the 1990 and 1980 Plans, and the 1980 Program.

2. Summary statements concerning the physical state, performance, and costs of the Plans and Programs reported.
3. Descriptions in quantitative and/or qualitative terms of non- and low-capital policies and programs established as part of the 1990 and 1980 Plans and the 1980 Program as well as those existing as part of the 1972 Inventory.
4. Comments from local officials regarding their agreement or disagreement with the Plans and Programs developed by the urban planning groups.
5. Comments by State officials outlining changes made at the State level to locally developed Plans and Programs.
6. The influence of the 1974 National Transportation Study on the on-going planning-programming process of the State and local areas.
7. Other information the Department should be aware of in interpreting the reported data.
8. Other discussion of a policy nature regarding the Federal, State, local, and private sector roles in program implementation. A more detailed specification for the Narrative Report will be provided in Manual II.
9. Problems encountered in carrying out the 1974 Study and recommended changes for future studies.

Uses of the Information

The Department anticipates that the information collected from each State will be useful in the transportation planning and programming process – both statewide and local – for the same State in which it was collected. In addition, the Department plans to use this information in the following ways within the statistical limits of the data:

1. ***Monitoring of systems performance, physical development, and expenditures through time.*** Information regarding the 1972 Inventory, future year inventories in future studies, and expenditure patterns between inventory years (beginning with the 1976 Study) will be useful to the Department in monitoring the effectiveness of transportation expenditures of different types through time. In a gross sense this will indicate to what extent the system is improving, not changing or deteriorating, in what types of areas the effects are being felt, and the relationship of these phenomena to transportation expenditures, particularly Federally aided ones. This would indicate whether program areas might warrant increased or decreased emphasis of the Federal Government.
2. ***Comparison among States and areas.*** The static information regarding the 1972 Inventory will be useful in comparing the level of service offered, the physical facilities present, and their cost of operation among States and other areas. A time series of inventory information will eventually indicate those areas which make the most gains in different performance measures. Publication of these data will enable States to make comparisons of their own experience with that of other States in the context of the National system. In effect, this would begin to establish a minimum continuing transportation data base throughout the Nation. Analysis of this information would also indicate whether certain general types of geographic areas might warrant increased or decreased program emphasis by the Federal Government.
3. ***Comparison of long-range plans with current systems and comparison of long-range plan performance among areas.*** The 1972 Inventory and the 1990 Plan would be used to indicate the changes in system performance that could be anticipated if the plans were implemented – and at what cost. In a gross way, this would serve to point up what the Nation would be buying if the long-range plans were implemented, in terms that can be related to current experience with system performance. The general public as well as public sector decision makers would benefit from being able to relate anticipated changes to their current satisfaction or dissatisfaction with different elements of the system and to make judgements regarding the value of implementing such long-range plans at the estimated cost.
4. ***Comparison of current system with anticipated changes under current fund-***

ing assumptions. The 1972 Inventory and the 1980 Program would be compared to indicate whether changes in funding at various levels of government and in different programs might be warranted. In effect, lack of progress in performance in certain program areas or geographic areas may indicate a need to shift funding priorities.

5. ***Anticipated progress in meeting goals of the long-range plans.*** The 1980 Plan and 1980 Program would be compared in terms of the extent to which the anticipated budget-constrained program is on target with respect to attainment of 1990 Plan objectives. This would be useful in setting realistic national objectives on which to base Federal programs and policies.

6. ***Transportation expenditure priorities.*** The 1980 Plan and 1980 Program would be compared in order to determine those programs to which States and local areas would assign higher priorities under funding constraints. This information, along with narrative information in the State reports, would indicate, (1) the extent to which State or local priorities are consistent with national goals and transportation policies, (2) whether current programs and policies might impede progress toward certain State goals, or (3) whether State and local programming decisions under current programs might produce deficiencies with respect to national goals.

7. ***Analysis of alternatives.*** The information will provide a cross section of various State and local government solutions regarding physical development, performance, and cost. This and secondary sources of data can be used to derive relationships between the above dimensions in such a way that one or more can be varied and the resultant changes calculated for the other variables. Some such analytical tools have already been developed by the Department and are extremely useful in analyzing the sensitivity of system performance to alternative investment and operating policies. They are useful in answering questions such as what it would take to make specific percentage improvements, to optimize weighted service levels given budget constraints, and so forth.

8. ***Sources of funds.*** The information regarding sources of funds for the 1980 Program is considered necessary to develop realistic programs. The information can serve to identify at the national level differences among the modes and geographic areas in raising operating and capital funds and, in particular, the extent to which expenses would have to be borne by the general taxpayer.

9. ***Consistency checks.*** Certain items of information are useful in checking the validity of the remaining items. For example, total operating expenditures minus operating subsidies divided by total passengers should be an approximate indicator of average fare on an urban public transportation system.

10. ***Status of plans.*** Information regarding the sources of information which were used in developing the plans and programs will indicate the extent to which Department-sponsored plans and planning processes are kept current and are used in developing expenditure programs.

11. ***Exchange of information.*** Publication of all of the above information will be useful in keeping States informed of progress in transportation performance throughout the country and will improve planning and programming practices by disseminating information on how the planning and programming process is carried out across the Nation.

12. ***Special issues.*** Certain of the detailed information will provide a basis for analysis of specific issues such as srevice to the poor or elderly citizens, service to different land uses, etc.

DOT Assistance

DOT will assist the States, and through them local agencies to ensure successful completion of the 1974 Study. The organizational structure established to provide this support is described in detail in the section on Study Organization. A summary of assistance (personnel and data) to be provided is presented here.

DOT Headquarters. Manual I – General information regarding the 1974 National Transportation Study and Manual II – containing detailed instructions, forms, codes, etc., will be developed and distributed by DOT Headquarters. Tabulations of pertinent information from the 1972 Study will also be developed and distributed. Additionally, other sources of data will be evaluated and distributed if appropriate. DOT Headquarters will also evaluate methodological packages and computer programs useful in the planning-programming process and make these available to the States. In this connection, the Department is interested in comments from the States regarding data and methodologies they believe would be especially useful in their planning work. One member of the Department's Office of Systems Aanalysis and Information has been assigned the responsibility for field study coordination and assistance in each DOT Region. He will work closely with the corresponding Secretarial Representative and IPG (Intermodal Planning Group) in that Region.

Secretarial Representatives. Provides coordination between the States and DOT Washington Headquarters on policy and administrative matters in each DOT Region. Using technical help of the IPG he will transmit comments on the State work programs and progress reports to DOT Headquarters and generally monitor progress of the Study in the field.

Field Staff. Modal administration field offices and field assistance personnel (USCG, FAA, FHWA, UMTA) will provide assistance on technical elements of the study as they relate to their own on-going programs.

Field Review Team. Will provide guidance to DOT from the perspective of the field (States, urban areas, etc.) – in particular to agencies and individuals of DOT primarily responsible for the field effort.

Data Processing. The Department will develop and distribute to the States computer software to edit, update, and summarize the 1974 NTS coded data forms for reporting. The use of these programs by the State is, however, not mandatory. The State may elect to forward the completed coding forms to DOT for processing. If the completed coding forms are submitted, they will be processed as soon as possible and summary information will be returned to the State for use in other phases of the Study. The computer programs required for processing will require approximately the same level of effort to install and utilize as those distributed for processing the last Highway Needs Study data. However, the number of data cards will be considerably less as can be estimated from the equation that follows.

Since the information to be reported for the Study has been designed to be useful to the States in their planning-programming process, it is assumed many States will choose to do their own processing. These States will only be asked to submit appropriate output files and tabulations. Also, they will be given one additional month in which to respond if processing is to be accomplished by the State.

Either of the above approaches is acceptable. The States must indicate in their work program which approach they will use. This will enable the Department to determine its data processing workload. As an aid in making this assessment, the following formula can be used to estimate the approximate number of data cards which each State will have to prepare for the full study:

Estimated Number of Cards = 180 + 205 (number of urbanized areas) + 2 (number of airports in State Plan) + 16 (number of primary system airports) + 30 (number of Standard Metropolitan Statistical Areas).

STUDY ORGANIZATION

The organizational structure proposed for the 1974 NTS is based on three premises:

1. That decisions regarding future transportation plans be developed in a comprehensive manner and in cooperation with those units of government representative of people most affected by those decisions.
2. That institutional arrangements and operating mechanisms and skills established for the 1972 Study be utilized to the maximum extent possible.
3. That DOT Administration field offices and field assistance resources become closely associated with the transportation planning process.

The overall organizational structure proposed for the 1974 Study is in many respects quite similar to that operative for the 1972 Study. However,

several changes have been introduced. These changes, which are described later in this section, should result in better inter-governmental communication as well as more accessible and immediate Federal support to States, metropolitan, and local participant organizations.

The organization for the 1974 Study contains six distinct levels, each having its own set of responsibilities as well as coordinative and communication requirements with the other levels. These six levels are:

1. DOT Washington headquarters.
2. DOT field offices.
3. Governors' representatives.
4. State agencies.
5. Urbanized areas.
6. Industry groups and associations.

GENERAL OVERVIEW

In general, the following summarizes the primary responsibilities and flow of activities which constitute the organizational structure for the Study.

Manuals and other requests for information as well as procedural guidelines and instructions are initiated in DOT Headquarters in Washintgon. The return of all data and information requested is ultimately destined for the Washington DOT Headquarters. Governors have overall responsibility for conduct of the Study and for developing a single and consistent statewide submission from the individual elements produced by the various State and metropolitan agencies participating in the Study. The Governor is also responsible for establishing the basic lines of communication within the State and for producing and submitting to Washington a work program covering the total study period.

Conduct of the Study in urbanized areas is under the direction of an appointed lead agency which is responsible for the technical elements of work as well as ensuring that it is fully coordinated with local jurisdictions and local and metropolitan planning and operating agencies. Appropriate State agencies should be given primary responsibility for the non-urban elements of the Study including the process of integrating statewide elements which the plans and information developed for the urbanized areas.

The Department's IPG's as well as the Secretary's Regional Representatives (see the *DOT Field Offices* section of this manual for a description of the duties of the IPG's and the Secretary's Representatives in the Department's field organization) have been assigned major coordinating and monitoring roles in the Study. In addition, the modal administrations' field offices and field assistance personnel will serve important technical assistance roles throughout the Study.

The Department will be requesting planning and development information from a wide assortment of private industry groups and associations for the Study. Contact with the private sector will also be within the responsibilities of each of the States.

Greater detail concerning each of the above follows:

Washington Headquarters. At the DOT Washington Headquarters level, an Executive Director and a Program Director have been appointed to manage the 1974 Study. The Executive Director (Assistant Secretary for Policy and International Affairs) has overall responsibility for the successful completion of the Study at the national level. The Program Director (Director, Office of Systems Analysis and Information) has been assigned the responsibility of study development and day-to-day supervision.

Assisting in the conduct of the Study are:

- *Steering Committee* consisting of the Administrators of each of the DOT Administrations and the Directors of key secretarial offices. This Committee will provide advice on policy matters.
- *Field Review Team* comprised of 11 outstanding State and local transportation and planning professionals. This team has and will continue to provide guidance to the study from the perspective of the field.
- *Washington DOT personnel* serving on three task forces—policy issues, planning process, and data analysis. The primary emphasis of these groups has been to:
  1. Establish the overall study objectives,
  2. Develop operational guidelines and institutional responsibilities for the field elements of the study, and
  3. Design the information requests and study manuals.

The Washington Headquarters office assumes the responsibility for the successful completion of the 1974 Study. It also assumes the responsibility for

the development and distribution of the study manuals and other information needed by the States and the analysis and reporting of the information submitted by each State as well as private industry groups and associations.

Each region has been assigned a technical liaison from Washington Headquarters staff. (See Appendix L for the list of individuals.) Team responsibilities will include the provision of on-going technical assistance to the States and metropolitan areas. They will serve as the direct point of contact with Washington for the Secretary's Representative and on overall study progress.

DOT Field Offices. Field resources of the Department have been mobilized for the purpose of having Federal DOT contacts highly accessible to each State and metropolitan area to ensure proper utilization and balanced workload. The total field resource has been divided into two major parts:

(1) The Secretary's Representatives and IPG's, and

(2) Administrative field offices and field assistance personnel.

The Secretary's Representative will serve as the key DOT contact in each region. His primary responsibilities include the fostering of coordination and cooperation among Federal, State, metropolitan, and local governmental agencies and bodies throughout the Study and the monitoring of progress in each State. More specifically, the Secretary's Representative will be responsible for:

- Consolidating his views, and the comments of the IPG members, on the proposed work plan developed by each Governor's Representative and forwarding them to the Program Director by August 31, 1972.
- Monitoring the level of progress in each State on the study by reviewing the monthly progress reports submitted by the Governor's Representative and forwarding them along with his comments and those of the IPG to the Program Director.
- Periodically distributing to each Governor's Representative and to his Washington technical liaison a summary of important issues and questions arising in the region with regard to the conduct of the study and recommended solutions.
- Initiating and maintaining contact with the Governor's Office and his Representative in each State in the region.

It is expected that the Secretary's Representative will arrange for meetings of the IPG at which time the study progress and technical and administrative issues can be discussed and from which he can develop the required reports for Washington.

The second DOT resource participating in the study is the individual regional and division offices of the administrations as well as other staff personnel who provide continuing field support. This group will provide necessary technical support to the States utilizing their normal lines of communications. Technical questions which cannot be resolved at this level should be directed either to a more appropriate DOT field resource, to the appropriate Headquarters office, or to the technical liaison in Washington for the region. The Department's field support personnel will be responsible for informing the Secretary's Representative of questions and problems directed by State or urban agencies to them and any decisions or solutions reached which are of interest to other participants in the study.

Governors and the Governor's Representative. Individual State Governors will be expected to assume the overall responsibility for the successful completion of all study requirements within their State. It is anticipated that the Governor will appoint a single agency or individual – the Governor's Representative – to be responsible for the development and conduct of the study. It is suggested that the State DOT, for those States having such an organization, be appointed to this position. In States where a DOT does not exist, it is suggested that the State agency having the primary State transportation planning responsibility be appointed.

It is recommended that the Governor and his Representative provide key State officials and legislators with information on the study progress. A suggested method would be through the establishment of an advisory committee to the Governor of appropriate State legislators and other officials. This committe should contain representation of each of the major transportation modes serving the State.

The Governor's Representative will be responsible for assembling all requested information for SMSA's, urbanized areas, small urban areas, and non-urban areas and consolidating these data into a single, consistent statewide report for submission to the

Program Director. It is suggested that the Governor's Representative assign the responsibility for developing the requested information for non-urban areas and for intercity transportation to the appropriate State transportation agencies; State DOT's and other bodies with multi-modal planning capabilities should be given primary responsibility.

The Governor will be responsible for designating an official agency to be responsible for the conduct of the study in each official U.S. Census-designated urbanized area within the State. The selection of the lead urbanized area agency should be based upon the Governor's assessment of which local agency can best supply the leadership, technical talent, experience, and administrative expertise required. It is further suggested that the Governor consider in his selection the proposed priority list of agencies suggested by the DOT to fulfill the area wide planning, single grant recipient role in metropolitan areas.

That listing, in order of preference is:

1. A State-created or authorized agency which encompasses both general and transportation planning functions;
2. A voluntary association if no State agency is available; or
3. Lacking a single agency of any type, formal agreements should be sought among area-wide planning agencies.

It is requested that the metropolitan A-95 clearinghouse agency or the policy committee for the local Section 134 planning process be given primary consideration. Other responsibilities of the Governor's Representative include:

- The development and submittal of the State Work Program to Washington and the Secretarial Representative and IPG members. Pertinent information regarding the program is contained in Part B of this manual.
- A consolidation and submission of monthly progress reports to the IPG members and the Secretary's Representative.
- Ensuring that the designated lead urban agencies keep local elected officials and other urban agencies and groups informed throughout the course of the study.
- The coordination, consolidation, and summarization of the individual State efforts into a final State submission. This submission should attempt to accommodate the comments and suggestions received from individual State participants.
- Coordination of the State's submission with neighboring States.
- Informing the Secretary's Representative of important questions and issues arising during the course of the Study.
- The development and submission of the State Narrative Report upon completion of the Study.

The process of synthesis and consolidation to the final State submission should include proper attention to existing statewide development plans and goals. Where effective statewide planning exists it should be used by the Governor's Representative as a basis for reconciling the individual urbanized area results with those developed for the rest of the State. Where a State development plan does not exist the Governor's Representative is strongly urged to enlist the advice and cooperation of the major State comprehensive and economic planning agencies in reconciling the State submission with other development and planning objectives established for the State. The Governor's Representative should consult with the agency responsible for preparing the State Implementation Plan under Section 110 of the Clean Air Act. This consultation should concern the air quality and other environmental implications of the transportation plans prepared by State, metropolitan, and local agencies and should be reflected in the NTS submissions. Also, the agency responsible for preparing the State Implementation Plan must be given the opportunity to review and comment on the State's NTS submission.

After having developed the initial State product, utilizing the submissions from State agencies and individual urban areas, the Governor's Representative will be required to return it to these same agencies and groups for comment. Comments and suggestions returned as a result of this review process will either be accommodated by changes in the final State submission to Washington or forwarded as part of the State submission. Also included as part of the State submission will be the Narrative Report, the details of which are described elsewhere in this manual.

State Agencies. The key to the success of the 1974 Study clearly rests with the State and its par-

ticipant organizations for it is here that the requested inventory, plan, and program information will be generated for reporting to the Department.

At the Federal level, an organizational structure has been established to provide the necessary assistance to the State and its participant organizations in their efforts. This organizational structure has been previously described. At the State level, it is desired to provide maximum flexibility in establishing an organizational structure for conduct of the Study. The States are therefore encouraged to use imagination and initiative to produce an organizational structure that will not only achieve the national requirements of the study but will also make efficient use of available resources and assure that the data produced are of maximum use to State and local planning agencies in their on-going planning and decision-making process.

In view of the above, the Department will not provide rigid guidelines to cover every possible study organizational contingency. The only requirement specified is that the Governor select and assign the appropriate State comprehensive, transportation, and other planning agencies the responsibility for successful completion of the non-urbanized and intercity elements of the Study. In selection of these agencies, it is requested that institutional arrangements established and proven successful and productive in the conduct of the 1972 Study be utilized. On the other hand, alternatives are recommended where previous arrangements did not operate in a satisfactory manner or where clearly superior arrangements can be made.

Regardless of the specific study organization established, it will be the responsibility of the State agencies selected to produce and submit the information required for non-urbanized and intercity transporation to the Governor's Representative.

It is also the responsibility of the selected State agencies to coordinate the development of their individual submittals with the Governor's Representative to ensure that the submittal is not only consistent with the agencies' own internal plans and programs but also with statewide plans and programs.

Urbanized Areas. The Governor is to select and assign responsibility for the successful completion of the study in urbanized areas within the State to an appropriate urbanized area agency. The selection of the lead urbanized area agency should be based upon the Governor's assessment of the agency best qualified to provide the leadership, technical talents, experience, and administrative expertise required.

The responsibilities of the selected urbanized area agencies will include:

- The development, assembly, and reporting of the required information described in Manuals I and II to the Governor's Representative.
- The development of a work program as described in Part B of this manual.
- The coordination of all available local talent and resources – for example, local airport authorities, transit authorities, port authorities, comprehensive planning agencies, and city, street, and traffic departments, etc. – should be solicited and encouraged throughout the study.
- The presentation of monthly progress reports for transmittal to the Governor's Representative. These reports should describe work progress to date, the degree and nature of involvement of contributing agencies, and a summary of any problems encountered that might influence the timely completion of required work elements.
- Review of the final State product, as returned by the Governor's Representative, and the submission of comments and recommendations for consideration in development of the State submission to Washington.
- The preparation of a Narrative Report summarizing and supplementing the entire Study effort for submittal to the Governor's Representative upon completion of the Study.

The Study must proceed with full and vigorous interchange of information between the States, metropolitan, and local agencies and groups participating in or affected by it. One possible procedure for meeting this requirement would be the conduct of quarterly briefings, by the lead urban agency, for local elected officials and representatives of public and private bodies. The lead urban agency should also consider the metropolitan A–95 agency as an effective way of disseminating the study results and obtaining comments which will become part of the submission to the Governor's Representative and to the Program Director.

Industry Groups and Associations. The final participating groups in the 1974 Study are private industry groups and associations. The DOT will be requesting planning and development information from private agencies for use in the study. This information is particularly crucial in such areas as aviation, railroad, and port development where major decisions are made outside governmental jurisdiction. Information so gathered will be transmitted by DOT to the Governors' Representatives. It will be the responsibility of the Governor's Representative to insure that pertinent information is reviewed and consolidated and considered by appropriate State and local agencies in the development of the requested transportation plans and programs.

In general, the DOT will limit its contact to national associations representing the various manufacturing and operating groups and industries. Individual States should be responsible for contracting the appropriate specific carriers or firms whose activities are of particular relevance to the transportation plans and programs of the State.

STUDY SCHEDULE

The time schedules established for the 1974 National Transportation Study which are relevant for State organization and planning purposes are provided below. Some adjustment of time frames within the final data submittals to DOT may result from the Phase 1 – State Work Programs submitted by each State.

		Due
Phase 1	State Work Program (Work Element #1)	August 1, 1972
	Distribution of general information document	May 1972
	Regional meetings	April-May, 1972
	State work program (Work Element #1)	August 1, 1972
Phase 2	Development of 1972 Inventory and 1990 Plan	February 1972
	Distribution of forms and detailed instructions	August 1972
	Regional meetings on details	September 1972
	DOT provides information summarized for State use	September 1972
	1972 Inventory Data submitted to DOT (Work Element #2)	February 1973*
	1990 Plan Data submitted to DOT (Work Element #3)	February 1973*
Phase 3	Development of 1980 Plan and Program and Special Area Analyses	July 1973
	Distribution of forms and detailed instructions	August 1972
	Regional meetings on details	September 1972
	1980 Plan submitted to DOT (Work Element #4)	July 1973*
	1980 Program submitted to DOT (Work Element #5)	July 1973*
	Special Area Analyses submitted to DOT (Work Element #6)	July 1973*

NOTE: If State keypunches, keyverifies, edits, updates, etc., coded information using DOT-supplied computer software, an additional month is added to the due dates shown with an asterisk (*). See Data Processing section on page 16 for information on estimating workload.

STUDY FUNDING

As previously discussed, the 1974 National Transportation Study consists of three major phases; i.e.,

Phase 1 – State Work Program.
Phase 2 – Development of 1972 Inventory and 1990 Plan.
Phase 3 – Development of 1980 Plan and Program and Special Area Analyses.

At this time, $2,350,000 has been specifically authorized for distribution to the States to support *Phase 1 and 2* of the Study. The Department expects to have available a comparable amount to support Phase 3. If authorized, this funding is expected to be available in late summer – early fall of 1972.

In development of the Work Program (Phase 1), the States should reflect the total 1974 Study effort (Phases 1, 2, and 3); however, the Work Program should be organized such that if the additional funds do not become available it will not jeopardize successful completion of Phases 1 and 2.

The allocation of funds among States for Phases 1 and 2 is contained in the following table. The basis of the allocation is one-third (1/3) to each State on an equal basis and two-thirds (2/3) on the basis of population. It can be assumed that the additional funds anticipated will be allocated in a similar fashion.

The funds shown in the following table will be allocated in two equal parts. The first part will be available prior to beginning Phase 1 to be used for developing the State Work Program and for a portion of Phase 2 work. After review and acceptance of the State-submitted Work Program by DOT, the second half of the funds shown in the table will be made available for completion of Phase 2.

MAJOR ELEMENTS OF STATE PLANNING IN 1974 NATIONAL TRANSPORTATION STUDY

1. Preparation of Work Program
2. 1972 Inventory
3. 1972–1990 Plan
4. 1972–1980 Plan
5. 1972–1980 Program
6. Special Area Analysis

Federal Funds Available for Elements 1, 2, and 3
(Dollars by State)

ALABAMA	$ 40,775	MASSACHUSETTS	$ 57,564	RHODE ISLAND	$ 22,120
ARIZONA	28,273	MICHIGAN	81,390	SOUTH CAROLINA	34,391
ARKANSAS	29,401	MINNESOTA	43,474	SOUTH DAKOTA	19,995
CALIFORNIA	164,236	MISSISSIPPI	31,597	TENNESSEE	44,364
COLORADO	31,525	MISSOURI	49,997	TEXAS	98,752
CONNECTICUT	37,694	MONTANA	20,211	UTAH	22,939
DELAWARE	19,117	NEBRASKA	26,114	VERMONT	18,341
FLORIDA	65,792	NEVADA	18,673	VIRGINIA	49,781
GEORGIA	49,341	NEW HAMPSHIRE	20,534	WASHINGTON	40,513
IDAHO	20,347	NEW JERSEY	68,624	WEST VIRGINIA	28,062
ILLINOIS	98,133	NEW MEXICO	22,616	WISCONSIN	48,057
INDIANA	53,858	NEW YORK	151,056	WYOMING	17,504
IOWA	36,145	NORTH CAROLINA	53,024	ALASKA	17,277
KANSAS	31,837	NORTH DAKOTA	19,638	HAWAII	20,765
KENTUCKY	39,093	OHIO	94,678	DISTRICT OF COLUMBIA	20,000
LOUISIANA	42,263	OKLAHOMA	34,157	PUERTO RICO	35,299
MAINE	22,437	OREGON	30,658	GUAM	10,000
MARYLAND	44,351	PENNSYLVANIA	103,218	SAMOA	10,000
				VIRGIN ISLANDS	10,000

PART B—DEVELOPMENT OF STATE WORK PROGRAM

INTRODUCTION

The 1974 NTS represents a project of considerable scope and magnitude. Successful and timely completion of the study will require outstanding project management at the Federal, State, and local levels of government.

To help assure a successful project, the DOT is requesting each State to prepare a 1974 National Transportation Study Work Program. The Work Program is to reflect the method of approach to be employed by the State and its participant organizations to accomplish the requirements of the Study. It should include but not necessarily be limited to discussion relative to:

(1) State and local goals.
(2) Study organization.
(3) Major work elements.
(4) Sources of information.
(5) Resource allocation.
(6) Data processing.
(7) Study schedule.

The State Work Program is to be submitted to the appropriate Secretarial Representative, IPG, and the Program Director in Washington, D.C. for review no later than August 1, 1972.

The remainder of this part of the manual presents guidelines for the completion of Phase 1 of the 1974 National Transportation Study, *i.e.*, Development of the State Work Program.

Purpose of the State Work Program

The purpose of the State Work Program is to help assure successful completion of the Study. The development of the requested program will aid in achieving this goal by:

- Assisting States to develop a complete and overall understanding of the requirements of the Study and thereby better allocate resources to effect efficiencies and economies.
- Assisting States to monitor the progress of the individual participant organizations in the Study at the statewide level.
- Assisting the DOT to develop a more complete appreciation for the problems of the participants and thereby better structure field support procedures.
- Assisting the DOT to monitor the progress of the individual participant organizations at the nationwide level.

The benefits to be derived from the development of the Work Program will be maximized if each participant approaches its development not as an exercise for some other level of government, but as an opportunity to structure assigned work in a manner that will not only meet national goals but also complement and strengthen existing planning efforts.

General Conditions

The DOT does not intend to specify the exact content and format of the State Work Program. The Department believes that the program should be structured so that it best serves – within certain constraints – the needs of the individual States. Furthermore, the Department does not intend to specify the method of development. Some States may choose to develop general guidelines and requst that each participant organzation develop and submit a work program for consolidation at the State level. Other States may choose to develop an overall statewide design for submittal to individual participant organizations for review and comments. Although either approach is acceptable, the first is preferred since the Department believes the consolidated statewide design developed in this manner will better reflect local goals and objectives. Regardless of the approach selected, the State work program should be developed so that:

- It becomes a viable management tool in the 1974 National Transportation Study.
- It reflects the views of all major participant organizations.
- It assists in producing study results that are multi-modal in scope.

INFORMATION REQUESTS

As previously stated, the State Work Program is to be developed to best serve the needs of the individual State in accomplishing the requirements of the 1974 Study. The exact format and content of the program is therefore to be determined by the State and its participant organizations; however, it should contain information relative to the following:

Study Goals. At the national level, study goals, purposes, and objectives have been established (see Part A of this manual). The Department believes that study goals should also be established by State and local participants. It is therefore requested that the State establish a set of 1974 National Transportation Study Goals that are consistent with the national goals and at the same time maximize benefits to the State and its participant organizations. In other words, the State Work Program should indicate how the information developed for this study will be used to complement and strengthen the on-going planning-programming process. It should also indicate important transportation issues the State feels should be addressed in the context of the 1974 Study.

Study Organization. The manner in which the State proposes to organize to accomplish the requirements of the 1974 Study is viewed by the Department as a State/local decision within one constraint – the overall responsibility for the successful completion of the study must be borne by the Governor or his appointed representative. Within this one constraint, it is requested that the State and its participant organizations develop and report a proposed study organization. The information reported should clearly show by whom the study is being directed, major participant organizations, the relationship of major participant organizations to one another, the anticipated use of consultants and how they fit into the organization, and the method to be employed to assure maximum local participation and involvement of urban study agencies and non-urban study groups. An organizational chart should be included. Discussion relative to the merits of the structure established is encouraged. In reference to the urban study agencies, it is requested that discussion describing the agency and who it represents be included. If the urbanized area is greater than 500,000 population, it is requested that additional discussion be included relative to the agency's simulation capabilities in general and in particular as these capabilities relate to the agency's ability to perform the special area analysis. General discussion relative to the method of approach to be used and problems envisioned in the special area effort is encouraged. In addition, it is requested that the Work Program include information relative to the approach to be employed in multi-state urbanized areas (lead State, method of funding, method of coordination, etc.). The Department requests that information from multi-state urbanized areas be submitted by each State for the portion of the urbanized area within the State. Additionally, the lead State should submit a reporting for the entire urbanized area. This same approach will be used for reporting information requested on a SMSA basis.

Major Work Elements. The scope and magnitude of the 1974 Study is such that a best effort can only result if each major participant organization has a broad overview of the entire effort prior to beginning work. The Department is therefore requesting that the State report what it envisions to be the major work elements in the 1974 Study. Examples of very broad work elements could include:

(1) Conduct local training sessions.

(2) Update air transportation system to January 1, 1972.

(3) Develop 1990 transportation plan.

(4) Compile zonal information for special area analysis.

(5) Process highway transportation system data.

It is anticipated that the delineation of major work elements will vary from State-to-State; however, each State Work Program should clearly show what the State sees as the major work elements and to whom they have been assigned for completion.

Sources of Information – To the extent possible it is requested that each State report the specific sources of information to be used in the development of the requested inventory plans, and program. Also included should be the basis under which the information was developed, the year developed, the future years for which developed, the

sources of funding utilized, and the status of the plan or program. For example—

1990 Transportation Plan

Source – Metropolitan Area Transportation Plan (May 1968).

Basis of development – Highway portion developed by statewide planning agency, transit portion developed by the ABC Consulting Engineers.

Year developed – 1964 (base year).

Future years – 1975 and 1985 (Note: 1990 information to be developed by extrapolation of 1975 – 1985 trend).

Sources of funding – HP & R 1-½% funds, Urban Mass Transit Planning Grant, etc.

Status – Officially adopted by policy committee, May 1969.

However, inasmuch as the details of the requested data and information will have to await Manual II, it is recognized that the Work Program will not be capable of reporting all of this information. Every effort should be made to include as much detail as possible.

Resource Allocation – Part A of this manual states the method used to allocate Federal National Transportation Study funds to States and presents a tabulation of actual dollars allocated to each State to support the 1974 Study effort. It is requested that each State present similar information indicating the method used and the actual dollars re-allocated to State participant organizations. The State is encouraged to develop a funding method which results in a re-allocation of funds to urbanized areas reflective of overall transportation deficiencies and population. In addition, it is requested that the State estimate additional funds (if any) required to accomplish the requirements of the Study. If possible, sources of additional funding including HP & R, UMTA systems planning, and other Departmental planning funds should be noted. In estimating additional funding needs, it should be remembered that the State allocations shown in Part A are to be used to support only Phases 1 and 2. It can be assumed that a similar amount will be available to support Phase 3.

Although not a requirement of the work program, each State is encouraged to allocate available funds and manpower to major work elements. This detailed allocation of resources should prove valuable in isolating areas of greatest need and areas consuming a disproportionate share of available resources.

Data Processing – As indicated in Part A, the Department will develop and make available to the State computer programs to edit, update, and generate the reports required for the1974 Study. Use of these programs by the State is encouraged but not mandatory. The State has the option of transmitting completed coding forms to the Department for processing. The approach selected should be discussed in the Work Program. Those States that elect to process the Study in-house should include information relative to the department or agency expected to provide the major data processing service (*i.e.*, Department of Transportation, Department of Administration, etc.); a brief discussion of that group's hardware and software configuration; any administrative problems envisioned in servicing study participants, such as a local transit authority; and an estimate of the amount the State expects to contract to outside vendors. The number of punched cards to be produced can be estimated by the equation in the *Data Processing* section of Part A of this manual. The computer program steps will be similar to that of the last Highway Needs Study and the programs to be made available will require about the same effort to install and utilize. However, the number of data cards will be considerably less than for the Highway Needs Study.

Study Work Schedule. The State is requested to estimate the start-date and end-date for each major work element defined. In developing these estimates, the pertinent dates shown in Part A, *Study Schedule*, are to be observed. The schedule established by the State will be used by the Secretary's Representative to monitor the State's progress and hopefully, by the States to monitor the progress of its participant organizations.

Although the Department does not intend to specify a project control method, it encourages the use of some version of the critical path technique. This method has several advantages among which are—

- A thorough knowledge of the overall project is obtained by constructing the critical path diagram.
- The technique takes into consideration the interrelationship between individual work elements.

- All requested information (description of work element, start-date, end-date, man-days, dollar cost, etc.) can be consolidated into one descriptive and meaningful diagram.

PHASE 1 SCHEDULE

Phase 1 of the 1974 National Transportation Study is scheduled to run from May 1972, through July 1972. A generalized statement of the work to be accomplished during this period is outlined:

April – May—It is expected that the State will review Manual I of the 1974 National Transportation Study and formulate questions for discussion at regional kickoff meetings. The State should also begin contacting major study participants.

May – June 1972—In addition to attending the regional meeting, the State should continue its coordinative role and conduct local briefings as necessary. Staff should be assembled and work on the Work Program should proceed to the development of the first draft.

July 1972 – During the month of July, the State should complete and transmit the final State Work Program to the Secretary's Representative, IPG, and Program Director, for review.

August 1972 – The State can continue study work as deemed appropriate. The only formal work item scheduled is State review and consideration of comments relative to the State Work Program. These comments will be returned sometime during the month.

APPENDICES

APPENDIX A

HIGHWAY PHYSICAL STATE, PERFORMANCE, AND COSTS
(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (For each urbanized area*, total of small urban 5,000 – 25,000 and 25,000 – 50,000, and total rural.)

A. Miles by functional classification within administrative jurisdiction (Federal domain, State, county, local-municipal, authority)–

Urbanized & small urban	*Rural*
1. Interstate.	1. Interstate.
2. Other freeways & expressways.	2. Other principle arterials.
3. Other principle arterials.	3. Minor arterials.
4. Minor arterials.	4. Major collectors.
5. Collectors.	5. Minor collectors.
6. Local roads.	6. Local roads.

B. Annual vehicle miles of travel by functional classification.

C. Annual vehicle hours of travel by functional classification.

D. Capacity miles of arterial facilities.

E. Accidents (Area totals, not by functional classification)–

1. Total annual fatalities.
2. Total annual injuries.

HIGHWAY PERFORMANCE (For each urbanized area*, total of small urban 5,000 – 25,00 and 25,00 – 50,000, and total rural. Total for all functional systems excluding local roads, except where noted otherwise.)

A. Service–

1. Arterial capacity miles per square mile (rural), per capita (urban).
2. Vehicle miles per vehicle hour (average automobile speed).

B. Usage–

1. Vehicle miles per capacity miles–
   Peak hour in peak direction.
2. Average car occupancy–
   A.M. peak (urban only).
   Total average daily.
3. Percent of arterial travel on freeways.
4. Total auto trips (24 hr.) not by functional classification.
5. Total taxicab trips (24 hr.) not by functional classification.

C. Environment–

1. Total tons of pollutants by type (DOT will provide guidelines)– per vehicle miles of travel.
2. Parts/million of pollutants over area affected (DOT will provide procedure) (urban only).
3. Total right-of-way taken up by highways.

D. Trip length–

1. Average vehicle trip length – miles.
2. Average vehicle trip length – minutes.

E. Safety–

1. Fatalities per vehicle mile of travel.
2. Injuries per vehicle mile of travel.

F. Economic–

1. Total jobs re-located (by Plans & Program) (urban only).
2. Total population re-located (by Plans & Program) (urban only).
3. Right-of-way reserved for future use (beyond Plans & Program).

TOTAL COSTS (For each urbanized area*, total of small urban 5,000 – 25,000 and 25,000 – 50,000, and total rural.)

A. For 1980 and 1990 Plans and 1980 Program– total expenditure for:

1. Right-of-way costs.
2. Construction costs on new location.
3. Additions and modifications on existing locations:
   (a) Construction (channelization, widening, grade separations, etc.).
   (b) Traffic control (signals, signs, etc.).
   (c) Other.
4. Maintenance, administration, and other miscellaneous and highway police and safety (also for the 1972 Inventory year).
5. Bond interest (for the 1972 Inventory year and 1980 Programs only).

B. The above costs are also to be reported by Standard Metropolitan Statistical Areas, small urban 5,000 – 25,000 & 25,000 – 50,000, and rural outside of Standard Metropolitan Statistical Areas.

SOURCE OF FUNDS See Appendix J.

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*For urbanized areas with greater than 500,000 population all information is to be reported separately for the central city and the remainder of the area.

APPENDIX B

URBAN MASS TRANSPORTATION
PHYSICAL STATE, PERFORMANCE, AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (For each urbanized area*.)

A. Miles by system type within jurisdiction (State, county, local/municipal authority, private)–

1. Bus route miles–
   a. Miles of local service.
   b. Miles of express service.
   c. Miles on exclusive right-of-way.
   d. Miles on special controlled facilities.
2. Commuter rail miles–
   a. Miles of line.
   b. Miles of track:
      (1) Miles in median strips at grade.
      (2) Other at grade.
      (3) Miles elevated.
      (4) Miles underground.
      (5) Miles electrified.
      (6) Miles non-electrified.
2. Rapid rail miles–
   (Same as for commuter rail miles).
3. Other transit–
   a. Route miles.

B. Seat miles of service–

1. Bus routes–
   a. Seat miles operating A.M. peak hour – Total; and in prime direction.
   b. Seat miles operating weekdays.
   c. Seat miles operating Saturday and Sunday.
2. Commuter rail – Seat miles (same as a. – c. for bus routes).
3. Rapid rail – Seat miles (same as a. – c. for bus routes).
4. Other Transit – Seat miles (same as a. – c. for bus routes).

C. Stock of vehicles–

1. Buses – number–
   a. 25 and under seats.
   b. 26 – 45 seats.
   c. 46 and over seats.

2. Bus age – 5-year increment – (0–5 years, 6–10 years, 11–15, etc.).
3. Rail cars – commuter rail–
   a. Number.
   b. Average number of seats.
   c. Age – 10-year increments (0–10 years, 11–20 years, 21–30 years, etc.).
4. Rail cars – Rapid rail (same as a., b., c. for commuter rail).
5. Other transit vehicles, number of vehicles and seats.

D. Total person trips–

1. Bus–
   a. A.M. peak hour.
   b. Total day.
2. Commuter rail–
   a. A.M. peak hour.
   b. Total day.
3. Rapid rail–
   a. A.M. peak hour.
   b. Total day.
4. Other (specify)–
   a. A.M. peak hour.
   b. Total day.

E. Person miles travel–

1. Bus routes–
   a. A.M. peak hour.
   b. Total day.
2. Commuter rail routes–
   a. A.M. peak hour.
   b. Total day.
3. Rapid rail routes–
   a. A.M. peak hour.
   b. Total day.
4. Other transit–
   a. A.M. peak hour.
   b. Total day.

F. Accidents by vehicle type–

1. Bus–
   a. Total fatalities.
   b. Total injuries.
2. Commuter rail (same as bus).
3. Rapid rail (same as bus).
4. Other (same as bus).

G. Transit performance (for each urbanized area*)–

1. Service–
   a. Distance of service from population:
      (1) Percent of population and percent of employment within ¼ mile on either side of all bus routes (½-mile band).

(2) Percent of population and percent of employment within 3 miles on either side of commuter rail routes (6-mile band).

(3) Same as (2) for rapid rail.

b. Average vehicle speed – separately for bus, commuter rail, rapid rail, other:

(1) A.M. peak hour – peak direction.

(2) Total average weekday.

c. Seat miles/square mile – separately for bus, commuter rail, rapid rail, other:

(1) A.M. peak hour – peak direction.

(2) Total average weekday.

d. Average headways - separately for bus, commuter rail, rapid rail, other:

(1) A.M. peak hour – peak direction.

(2) Total average weekday.

2. Usage (separately for bus, commuter rail, rapid rail)–

a. Load factor (person miles/seat miles):

(1) A.M. peak hour – peak direction.

(2) Total average weekday.

3. Environment (separately for bus, commuter rail, rapid rail)–

a. Total tons of pollutants by type (DOT will provide guidelines):

(1) Per person miles of travel.

(2) Per vehicle miles of travel.

b. Parts/million of pollutants over area affected (DOT will provide procedure).

c. Total land taken up separately by bus facilities, commuter rail facilities, and rapid rail facilities.

4. Trip length (separately for bus, commuter rail, rapid rail)–

a. Average person trip length – miles.

b. Average person trip length – minutes.

5. Safety (separately for bus, commuter rail, rapid rail)–

a. Fatalities per passenger mile of travel.

b. Injuries per passenger mile of travel.

6. Economic (bus and rail)–

a. Profit/loss per passenger mile – annual.

b. Profit/loss per seat mile – annual.

c. Vehicle miles/vehicle per year.

d. Average fare.

e. Total jobs relocated (by Plans & Program).

f. Total population relocated (by Plans & Program).

g. Right-of-way reserved for future use (beyond Plans and Program).

TOTAL COSTS (For each urbanized area*, and for total of small urban areas 5,000 – 25,000 and 25,000 – 50,000.)

A. For 1980 and 1990 Plans and 1980 Program (separately for bus, commuter rail, rapid rail, other)–

1. Right-of-way.
2. Line.
3. Stations and terminals.
4. Rolling stock.
5. Other capital costs.
6. Operating costs (also for the 1972 Inventory year).
7. Bond interest (for 1972 Inventory year and 1980 Program).

B. For the 1980 and 1990 Plans and 1980 Program for each SMSA–

1. Total capital cost.
2. Total operating cost (also for 1972 Inventory year).

SOURCE OF FUNDS See Appendix J.

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*For urbanized areas with greater than 500,000 population all information is to be reported separately for the central city and the remainder of the area.

APPENDIX C

AIRPORT PHYSICAL STATE, PERFORMANCE, AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE

A. General description – all airports in State System Plan or NASP–

1. Airport & location identification.
2. Ownership.
3. Operating role:
   a. Air carrier served.
   b. General aviation reliever.
   c. Other general aviation.
4. Whether in NASP.
5. Whether served by scheduled air taxi (1972 only).

B. Physical facilities – all airports in State System Plan or NASP–

1. Whether paved.
2. Whether lighted.
3. Whether minimum navaids present.
4. Whether control tower present.

C. Description of physical facilities–

1. Area of land by function – all air carrier served or relievers in hubs and/or serving urbanized areas with over 250,000 population, unless otherwise noted:
   a. Total airport use.
   b. Land reserved for future use (beyond Plans & Program).

Items (c.) through (f.) are for primary system airports in large hubs only.

   c. Airfield.
   d. Passenger terminal.
   e. Pure cargo terminal.
   f. Other airport use (*e.g.*, access, circulation, maintenance).

2. Description of airfield – for air carriers served or relievers in hubs and/or serving urbanized areas of 250,000 or more population:
   a. Capacity–
      (1) PANCAP.
      (2) IFR PHOCAP.
      (3) VFR PHOCAP.
      (4) Largest aircraft that can be handled.
   b. Number of air carrier gate positions.
   c. Number of general aviation gate positions.
   d. Number of pure cargo aircraft loading positions.

3. Description of access/circulation system – for primary system airports in large hubs:
   a. Number of public auto parking spaces.
   b. Highway access lanes at bottleneck (one way).
   c. Highway access system capacity at bottleneck in vehicles per hour (one way).
   d. Highway access (exclusive to airport) miles to nearest public road.
   e. Whether served by busway.
   f. Whether served by rapid rail.
   g. Whether served by other system.
   h. Number of "off airport" terminals with bus or limousine service.
   i. Number of "off airport" terminals with bus service.
   j. Whether served by "people mover" internal circulation system.
4. Airport activity – for all air carriers served or relievers in hubs and/or serving urbanized areas with over 250,000 population, unless otherwise noted:
   a. Annual passenger air carrier enplanements.
   b. Annual passenger general aviation enplanements.
   c. Annual general aviation operations.
   d. Annual air carrier operations.
   e. Peak hour air carrier operations.
   f. Annual cargo ton enplanements.
   g. Access modal split (%) (only for primary system airports in large hubs)–
      (1) Auto.
      (2) Bus.
      (3) Rail.
      (4) Other.
   h. Percent of passengers with origin or distribution in CBD (central business district) (only for primary system airports in large hubs.

AIRPORT PERFORMANCE MEASURES

A. For all air carriers served or relievers in hubs and/or serving urbanized areas with over 250,000 population–
   1. Peak hour delay per operation (FAA method).
   2. Access time to CBD – peak hour by mode.
   3. Access out-of-pocket cost to CBD – peak hour by mode.
   4. Distance from closest alternatives air carrier served airport.
   5. Households displaced by future development.
   6. Jobs displaced by future development.
   7. Tons of pollutant per year by type.

B. For all primary system airports in large hubs–
   1. Number of restraints within 30 minutes driving time in peak hour.
   2. Number of jobs within 30 minutes driving time in peak hour.
   3. Area of noise "footprint" (within the 30 and 40 NEF contour).
   4. Residents within "footprint" (within the 30 and 40 NEF contour).
   5. Jobs within "footprint" (within the 30 and 40 NEF contour).

AIRPORT SYSTEM PERFORMANCE MEASURES

A. Statewide statistics–
   1. Annual general aviation accidents.
   2. Annual general aviation fatalities.
   3. Number and percent of communities with at least 1,000 population within 30 minutes driving time of an airport in the system.
   4. Number and percentage of population residing in the entire State and:
      a. Within 30 and 60 minutes of any airport.
      b. Within 30 and 60 minutes of any airport with scheduled service including third-level airports (for 1972 only).
      c. Within 30 and 60 minutes of any air carrier airport.

B. For each hub and/or urbanized area with over 250,000 population–
   1. Number and percentage of population residing in each hub and/or urbanized area over 250,000 population and:
      a. Within 30 and 60 minutes of any airport.
      b. Within 30 and 60 minutes of any airport with scheduled service including third-level airports (for 1972 only).
      c. Within 30 and 60 minutes of any air carrier airport.

TOTAL COSTS

A. For primary system airports in large hubs–
   1. Airfield construction cost.
   2. Passenger terminal construction cost.
   3. Cargo terminal construction cost.
   4. Other aeronautical use buildings (except FAA towers, etc.).
   5. All other construction costs:
      a. Auto access road system.
      b. Other access systems.
      c. Public parking.
      d. People mover internal system.
      e. All other.

B. For all air carriers served or relievers in hubs and/or serving urbanized areas with over 250,000 population–
   1. Land cost.
   2. Land reserved for future use.
   3. Total construction cost.
   4. Operating and maintenance cost.
   5. Bond interest (for 1972 Inventory year and 1980 Program).

C. For all airports in the State System Plan or NASP serving each urbanized area, aggregate small urban areas, and rest of State–
   1. Total construction cost.
   2. Total operating and maintenance cost.

D. Same as C except for each Standard Metropolitan Statistical Area, aggregate small urban areas, and rest of State.

SOURCE OF FUNDS See Appendix J.

APPENDIX D

PARKING FACILITIES
PHYSICAL STATE AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (On an urbanized area basis with more than 250,000 population.)

A. Physical facilities–

1. Central business district:

a. Total off-street parking spaces–

(1) Publicly owned–

(a) Garage.

(b) Lot.

(2) Privately owned public–

(a) Garage.

(b) Lot.

(3) Privately used–

(a) Garage.

(b) Lot.

b. Total street metered spaces.

2. Fringe parking serving transit system (same as for central business district).

3. Other parking (same as for central business district).

B. Activity–

1. Average daily demand – space hours:

a. Central business district.

b. Fringe parking serving transit system.

c. Other parking.

TOTAL COSTS (For each urbanized area, total of small urban areas 5,000 – 25,000 and 25,000 – 50,000, and rest of State.)

A. Separately for central business district and total fringe and other parking–

1. New construction – addition.
2. Land.
3. Maintenance and service.
4. Operation.
5. Bond interest (for the 1972 Inventory year and 1980 Program).
6. Other.

B. For each SMSA, total of small urban areas, and rest of State–

1. Total capital cost.
2. Total operating cost (also for the 1972 Inventory year).

SOURCE OF FUNDS See Appendix J.

APPENDIX E

MARINE TERMINALS, WATERWAYS AND HARBORS
PHYSICAL STATE AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (For each river and coastal port handling more than 500,000 tons of cargo in 1971.)

A. Physical facilities–

1. Passenger terminals (sq. ft.).
2. Cargo buildings (sq. ft.).
3. Piers:
   a. Number.
   b. Linear feet at waterside.
   c. Mechanical cargo handling facilities:
      (1) Bulk (liquid).
      (2) Bulk (dry).
      (3) Break bulk.
      (4) Containerized.
4. Type of ships that can be handled.
5. Controlling depth of channel.

B. Marine activity–

1. Total operations:
   a. Annual docking demand – number by type of ship.
2. Passenger – cargo activity:
   a. Annual passengers.
   b. Annual tons cargo (in tons of 2,000 lbs.):
      (1) Domestic–
         - Bulk (liquid).
         - Bulk (dry).
         - Break bulk.
         - Containerized.
      (2) Foreign–
         - Bulk (liquid).
         - Bulk (dry).
         - Break bulk.
         - Containerized.

C. Capacity–

1. Peak passenger capacity (number per hour).
2. Peak cargo capacity (tons per day).

PERFORMANCE (For each river and coastal port handling more than 500,000 tons of cargo in 1971.)

A. Peak period demand–

1. Tons of cargo handled during peak day of the year:
   a. Bulk (liquid).
   b. Bulk (dry).
   c. Break bulk.
   d. Containerized.
2. Passengers served during peak day of the year.
3. Total ship movements during peak day of the year.

B. Adequacy of intermodal connections–

1. Distance to closest access point to an Interstate or major highway facility.
2. Is the port served by the following pipelines:
   a. Petroleum (crude).
   b. Petroleum (products).
   c. Slurry material.
   d. Other (identify).
3. Is the port served by Lighters, barges, Lash, etc., indicate type.
4. Distance to nearest airport providing air cargo service.
5. Are the following terminals served directly by railroad:
   a. Break bulk.
   b. Containers.
   c. Dry bulk.
   d. Liquid bulk.

C. Safety costs–

1. Freight damage per year.
2. Pilferage per year.
3. Port security per year.
4. Insurance per year.

TOTAL COSTS (For each port handling more than 500,000 tons of cargo in 1971, total of other ports in each urbanized area, small urban areas 5,000 – 25,000 and 25,000 -- 50,000, and total rural.)

A. For 1980 Plan and Program and 1990 Plan–

1. New construction – additions:
   a. Passenger terminals.
   b. Cargo buildings.
   c. Piers – docking facilities.
   d. Cargo handling equipment.
2. Land
3. Maintenance and service (also for the 1972 Inventory year).
4. Operation (also for the 1972 Inventory year).
5. Waterway and channel improvements.
6. Harbor improvements.
7. Bond interest (for the 1972 Inventory year and the 1980 Program).
8. Other.

B. For each SMSA for the 1980 Plan and Program and the 1990 Plan–

1. Total capital cost.
2. Total operating cost (also for the 1972 Inventory year).

SOURCE OF FUNDS See Appendix J.

APPENDIX F

BUS TERMINALS AND RELATED FACILITIES (INTERCITY) PHYSICAL STATE AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (On an urbanized area basis for areas with more than 250,000 population.)

A. Physical facilities–
   1. Passenger terminal (sq. ft.).
   2. Number of loading bays.
   3. Freight storage (sq. ft.).
   4. Number of bus terminals.

B. Bus activity–
   1. Passengers – annually.
   2. Buses – annually.
   3. Freight shipments – number.

C. Capacity–
   1. Passengers – peak period.
   2. Buses – peak period.

TOTAL COSTS (For each urbanized area, total of small urban areas 5,000 – 25,000 and 25,000 – 50,000, and rest of State.)

A. For 1980 Plan and Program and 1990 Plan–
   1. New construction – additions.
   2. Land.
   3. Maintenance and service.
   4. Operation.
   5. Bond interest (1980 Program only).
   6. Other.

B. For each SMSA, total of small urban areas, and rest of State–
   1. Total capital cost.
   2. Total operating cost.

SOURCE OF FUNDS See Appendix J.

APPENDIX G

RAILWAY TERMINALS AND RELATED FACILITIES (INTERCITY) PHYSICAL STATE AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (On an urbanized area basis for areas with more than 250,000 population.)

A. Physical facilities–
   1. Passenger buildings (sq. ft.).
   2. Freight Buildings (sq. ft.).
      a. Piggyback/containers.
      b. Bulk.
      c. Break bulk.
   3. Freight yard facilities (acres).
   4. Number of yards and terminals.

B. Rail activity–
   1. Passengers annually.
   2. Annual tons cargo:
      a. Bulk.
      b. Break bulk.
      c. Containerized.
   3. Freight cars annually.
   4. Passenger cars annually.

C. Capacity.
   1. Peak passenger capacity.
   2. Peak cargo capacity.

TOTAL COSTS (For each urbanized area and total of small urban areas 5,000 – 25,000 and 25,00 – 50,000, and rest of State.)

A. For 1980 Plan and Program and 1990 Plan–
   1. New construction – additions:
      a. Passenger terminal facilities.
      b. Freight building facilities.
      c. Freight yard facilities:
         (1) Piggyback/containers.
         (2) Other.
   2. Maintenance and service.
   3. Operation.
   4. Freight handling equipment – mechanized/non-mechanized.
   5. New trackage.
   6. Electrification.
   7. Bond interest (1980 Program only).
   8. Other.
   9. Land.

B. For each SMSA, total of small urban areas, and rest of State–

1. Total capital cost.
2. Total operating cost.

SOURCE OF FUNDS See Appendix J.

APPENDIX H

TRUCKING TERMINALS AND RELATED FACILITIES (INTERCITY) PHYSICAL STATE AND COSTS

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

PHYSICAL STATE (On an urbanized area basis for areas with more than 250,000 population.)

A. Physical facilities–

1. Total area (acres).
2. Buildings (sq. ft.).
3. Number of loading areas.

B. Activity–

1. Total trucks annually.
2. Total tons annually.

C. Capacity–

1. Peak truck capacity.
2. Peak cargo volume – tons.

TOTAL COSTS (For each urbanized area, total of small urban areas 5,000–25,000 and 25,000 – 50,000, and rest of State.)

A. For 1980 Plan and Program and 1990 Plan–

1. New construction - additions.
2. Land.
3. Maintenance and service.
4. Operation.
5. Bond interest (1980 Program only).
6. Other.

B. For each SMSA, small urban areas, and rest of State–

1. Total capital cost.
2. Total operating cost.

SOURCE OF FUNDS See Appendix J.

APPENDIX I

OTHER TRANSPORTATION SYSTEM COMPONENTS
EXPENDITURES ONLY

(1972 Inventory, 1980 Plan & Program, and 1990 Plan)

EXPENDITURES BY SYSTEM – (Intercity or Intracity Systems).

A. For each urbanized area, total of small urban areas 5,000 – 25,000 and 25,000 – 50,000, and rural:

1. Costs (separately for each system)–

a. Land.
b. Rolling stock.
c. New construction.
d. Maintenance and service.
e. Operation.
f. Bond interest (1980 Program only).
g. Other.

B. For each SMSA, small urban areas, and rest of State:

1. Costs (separately for each system)–

a. Total capital cost.
b. Total operating cost.

C. Describe system characteristics in Narrative.

SOURCE OF FUNDS See Appendix J.

APPENDIX J

SOURCES OF FUNDS

(1980 Program)

The following categories are to be reported for the major program as a whole by each SMSA, and the rest of State.

A. Sources of capital funds by area of application and major program 1972 to 1979–

1. Revenues or revenue borrowings of public agencies (supported by tolls, fares, etc.).
2. Taxes or tax supported borrowings:
   a. Federal DOT.
   b. Federal non-DOT.
   c. State user taxes or trust fund.
   d. State general fund.
   e. County or municipal.
   f. Authority or Consortium of Governments.
3. Private investment.

B. Financial data 1972 to 1979 (aggregate for State only)–

1. Revenue or revenue borrowings:
   a. Debt financed.
   b. Current revenues or reserves.
   c. Other sources (property sales, etc.).
2. State user taxes or trust funds:
   a. Debt financed.
   b. Current or accumulated taxes.
3. Other public funding:
   a. General debt.
   b. Current or accumulated taxes.

C. Sources of operating funds by area of application and major program 1971 and 1979–

1. Operating revenues (fares, tolls, etc.).
2. Other revenues (interest, property sales, non-related operations, etc.).
3. Taxes or operating subsidies:
   a. State user or trust fund.
   b. State general fund.
   c. County or municipal.
   d. Authority or Consortium of Governments.
4. Operating losses not covered by subsidy (1972 only).

APPENDIX K

DOT SECRETARIAL REPRESENTATIVES

Region/States	Secretarial Representative	Address/Telephone Number
I—Connecticut, Maine, Massachusetts, New Hampshire Rhode Island, and Vermont (Boston)	David W. Hays Secretarial Representative OST	Transportation Systems Center 55 Broadway Cambridge, Mass. 02142 617–494–2709
II—New York, New Jersey, Puerto Rico, and Virgin Islands (New York)	Lloyd Peterson Secretarial Representative OST	26 Federal Plaza, Rm 1811 New York, New York 10007 212–264–2672
III—Delaware, Dist. of Col., Maryland, Pennsylvania, Virginia, and West Virginia (Philadelphia)	James Costantino Secretarial Representative OST	Mall Building, Suite 1214 325 Chestnut Street Philadelphia, Pa. 19106 215–597–0407
IV—Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee (Atlanta)	Theodore N. McDowell Secretarial Representative OST	Suite 515 1720 Peachtree St., NW. Atlanta, Ga. 30309 404–526–3738
V—Illinois, Indiana, Minnesota, Michigan, Ohio, and Wisconsin (Chicago)	Norman Erbe Secretarial Representative OST	17th Floor 300 S. Wacker Drive Chicago, Illinois 60606 312–353–4000
VI—Arkansas, Louisiana, New Mexico, Oklahoma, and Texas (Dallas)	Ed Foreman Secretarial Representative OST	9–C–18 Federal Center 1100 Commerce Street Dallas, Texas 75202 214–749–1851
VII—Iowa, Kansas, Missouri, and Nebraska (Kansas City)	Russell R. Waesche Secretarial Representative OST	601 E 12th Street, Rm 634 Kansas City, Mo. 64106 816–374–5801
VIII—Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming (Denver)	Robert Kessler Secretarial Representative OST	c/o Wm. H. Baugh, FHWA Room 242, Bldg. 40 Denver Federal Center Denver, Colorado 80225 303–837–4136 (FRA)
IX—Arizona, California, Hawaii, Nevada, and Guam (San Francisco)	Peter J. Bertoglio Secretarial Representative OST	Box 36133 450 Golden Gate Ave. San Francisco, Calif. 94102 415–556–5961
X—Alaska, Idaho, Oregon, and Washington (Seattle)	Donald Samuelson Secretarial Representative OST	1321 Second Avenue, Rm. 5079 Seattle, Washington 98101 206–442–0590

APPENDIX L

DOT HEADQUARTERS FIELD SUPPORT PERSONNEL

Region	Name	Telephone
I	Daniel P. Maxfield	202–426–2090
II	Arrigo Mongini	202–426–4163
III	George Wiggers	202–426–4168
IV	Brian A. Poole	202–426–4150
V	Joseph P. Meck (Minn., Ohio, Mich.)	202–426–4138
	Edward Weiner (Wisc., Ill., Ind.)	202–426–4168
VI	John Harman	202–426–4214
VII	Joseph P. Meck	202–426–4138
VIII	Philip J. Barbato	202–426–4203
IX	Philip J. Barbato	202–426–4203
X	Carl N. Swerdloff	202–426–4168

APPENDIX M

RANK OF URBANIZED AREAS ACCORDING TO 1970 POPULATION

State	Urbanized Area	Population	Rank	Multi-State Area
Alabama	Birmingham	558,099	43	
	Mobile	257,816	80	
	Columbus	208,616	100	Ga.
	Huntsville	146,565	137	
	Montgomery	138,983	142	
	Tuscaloosa	85,875	192	
	Gadsden	67,706	225	
Arizona	Phoenix	863,357	27	
	Tucson	294,184	71	
Arkansas	Little Rock/North Little Rock	222,616	98	
	Fort Smith	75,517	211	Okla.
	Pine Bluff	60,907	235	
	Texarkana	58,570	239	Texas
California	Los Angeles/Long Beach	8,351,266	2	
	San Francisco/Oakland	2,987,850	6	
	San Diego	1,198,323	19	
	San Jose	1,025,273	25	
	Sacramento	633,732	38	
	San Bernadino/Riverside	583,597	41	
	Fresno	262,908	79	
	Oxnard/Ventura/Thousand Oaks	244,653	85	
	Bakersfield	176,155	113	
	Stockton	160,373	121	
	Santa Barbara	129,774	149	
	Modesto	106,107	166	
	Seaside/Monterey	93,547	183	
	Santa Rosa	75,083	213	
	Salinas	62,456	232	
	Simi Valley	56,936	241	
Colorado	Denver	1,047,311	24	
	Colorado Springs	204,766	103	
	Pueblo	103,300	169	
	Boulder	68,634	224	
Connecticut	Springfield/Chicopee/Holyoke	514,308	46	Mass.
	Hartford	465,001	52	
	Bridgeport	413,366	56	
	New Haven	348,341	64	
	Stamford	184,898	109	
	Waterbury	156,986	125	
	New Britain	131,349	148	
	Norwalk	106,707	164	
	Meriden	98,454	175	
	Bristol	71,732	216	
	Danbury	66,651	226	

RANK OF URBANIZED AREAS ACCORDING TO 1970 POPULATION—Continued

State	Urbanized Area	Population	Rank	Multi-State Area
Delaware	Wilmington	371, 267	60	N.J.
Dist. of Col.	Washington, D.C.	2, 481, 489	8	Md.-Va.
Florida	Miami	1, 219, 661	18	
	Fort Lauderdale/Hollywood	613, 797	39	
	Jacksonville	529, 585	45	
	St. Petersburg	495, 159	47	
	Tampa	368, 742	61	
	Orlando	305, 479	68	
	West Palm Beach	287, 561	73	
	Pensacola	166, 619	118	
	Tallahassee	77, 851	207	
	Gainesville	69, 329	223	
Georgia	Atlanta	1, 172, 778	20	
	Chattanooga	223, 580	96	Tenn.
	Columbus	208, 616	100	Ala.
	Savannah	163, 753	119	
	Augusta	148, 953	134	S.C.
	Macon	128, 065	152	
	Albany	76, 512	210	
Hawaii	Honolulu	442, 397	54	
Idaho	Boise City	85, 187	195	
Illinois	Chicago	6, 714, 578	3	Ind.
	St. Louis	1, 882, 944	10	Mo.
	Davenport/Rock Island/Moline	266, 119	77	Iowa
	Peoria	247, 121	84	
	Aurora/Elgin	232, 917	91	
	Rockford	206, 084	101	
	Joliet	155, 500	127	
	Springfield	12[illegible], 794	157	
	Champaign/Urbana	100, 417	172	
	Decatur	99, 693	173	
	Bloomington Normal	69, 392	222	
	Dubuque	65, 550	227	Iowa
Indiana	Chicago	6, 714, 578	3	Ill.
	Indianapolis	820, 259	29	
	Louisville	739, 396	33	Ky.
	South Bend	288, 572	72	Mich.
	Fort Wayne	225, 184	95	
	Evansville	142, 476	139	
	Muncie	90, 427	190	
	Terre Haute	80, 908	200	
	Anderson	80, 704	201	
	Lafayette/West Lafayette	79, 117	202	
Iowa	Omaha	491, 776	48	
	Davenport/Rock Island/Moline	266, 119	77	Ill.
	Des Moines	255, 824	81	
	Cedar Rapids	132, 008	147	
	Waterloo	112, 881	163	
	Sioux City	95, 937	178	Nebr.-S. Dak.
	Dubuque	65, 550	227	Ill.

RANK OF URBANIZED AREAS ACCORDING TO 1970 POPULATION—Continued

State	Urbanized Area	Population	Rank	Multi-State Area
Kansas	Kansas City	1, 101, 787	22	Mo.
	Wichita	302, 334	69	
	Topeka	132, 108	146	
	St. Joseph	77, 223	209	Mo.
Kentucky	Cincinnati	1, 110, 514	21	Ohio
	Louisville	739, 396	33	Ind.
	Huntington/Ashland	167, 583	116	Ohio-W. Va.
	Lexington	159, 538	122	
	Owensboro	53, 133	245	
Louisana	New Orleans	961, 728	26	
	Baton Rouge	249, 463	82	
	Shreveport	234, 564	90	
	Monroe	90, 567	189	
	Lake Charles	88, 260	191	
	Lafayette	78, 544	204	
Maine	Portland	106, 599	165	
	Lewiston/Auburn	65, 212	228	
Maryland	Washington, D.C.	2, 481, 489	8	D.C.-Va.
	Baltimore	1, 579, 781	14	
Massachusetts	Boston	2, 652, 575	7	
	Providence/Pawtucket/Warwick	795, 311	30	R. I.
	Springfield/Chicopee/Holyoke	514, 308	46	Conn.
	Worcester	247, 416	83	
	Lawrence/Haverhill	200, 280	105	N.H.
	Lowell	182, 731	110	
	Brockton	148, 844	135	
	Fall River	139, 392	140	R. I.
	New Bedford	133, 667	145	
	Fitchburg/Leominster	78, 053	206	
	Pittsfield	62, 872	231	
Michigan	Detroit	3, 970, 584	5	
	Toledo	487, 789	49	Ohio
	Grand Rapids	352, 703	63	
	Flint	330, 128	67	
	South Bend	288, 572	72	Ind.
	Lansing	229, 518	93	
	Ann Arbor	178, 605	112	
	Kalamazoo	152, 083	131	
	Saginaw	147, 552	136	
	Muskegon/Muskegon Heights	105, 716	167	
	Jackson	78, 572	203	
	Bay City	78, 097	205	
Minnesota	Minneapolis/St. Paul	1, 704, 423	12	
	Duluth/Superior	138, 352	143	Wis.
	Fargo/Moorhead	85, 446	194	N. Dak.
	LaCrosse	63, 373	230	Wis.
	Rochester	56, 936	242	
Mississippi	Memphis	663, 976	37	Tenn.
	Jackson	190, 060	108	
	Biloxi/Gulfport	121, 601	155	

RANK OF URBANIZED AREAS ACCORDING TO 1970 POPULATION—Continued

State	Urbanized Area	Population	Rank	Multi-State Area
Missouri	St. Louis	1, 882, 944	10	Ill.
	Kansas City	1, 101, 787	22	Kans.
	Springfield	121, 340	156	
	St. Joseph	77, 223	209	Kans.
	Columbia	59, 231	238	
Montana	Billings	71, 197	217	
	Great Falls	70, 905	218	
Nebraska	Omaha	491, 776	48	Iowa
	Lincoln	153, 443	128	
	Sioux City	95, 937	178	Iowa-S.Dak.
Nevada	Las Vegas	236, 681	89	
	Reno	99, 687	174	
New Hampshire	Lawrence/Haverhill	200, 280	105	Mass.
	Manchester	95, 140	180	
	Nashua	61, 809	234	
New Jersey	New York	16, 206, 841	1	N.Y.
	Philadelphia	4, 021, 066	4	Pa.
	Wilmington	371, 267	60	Del.
	Allentown/Bethlehem/Easton	363, 517	62	Pa.
	Trenton	274, 148	75	Pa.
	Atlantic City	134, 016	144	
	Vineland/Millville	73, 579	214	
New Mexico	Albuquerque	297, 451	70	
New York	New York	16, 206, 841	1	N.J.
	Buffalo	1, 086, 594	23	
	Rochester	601, 361	40	
	Albany/Schenectady/Troy	486, 525	50	
	Syracuse	376, 169	58	
	Utica/Rome	180, 355	111	
	Binghamton	167, 224	117	
North Carolina	Charlotte	279, 530	74	
	Fayetteville	161, 370	120	
	Raleigh	152, 289	129	
	Greensboro	152, 252	130	
	Winston/Salem	142, 584	138	
	Durham	100, 764	170	
	High Point	93, 547	182	
	Asheville	72, 451	215	
	Wilmington	57, 645	240	
North Dakota	Fargo/Moorhead	85, 446	194	Minn.
Ohio	Cleveland	1, 959, 880	9	
	Cincinnati	1, 110, 514	21	Ky.
	Columbus	790, 019	31	
	Dayton	685, 942	34	
	Akron	542, 775	44	
	Toledo	487, 789	49	Mich.
	Youngstown/Warren	395, 540	57	
	Canton	244, 279	86	
	Lorain/Elyria	192, 265	106	
	Hungtinton/Ashland	167, 583	116	Ky.-W. Va.
	Springfield	93, 653	181	
	Wheeling	92, 944	185	W. Va.
	Hamilton	91, 141	187	
	Steubenville/Weirton	85, 492	193	W. Va.
	Mansfield	77, 599	208	
	Lima	70, 295	220	

RANK OF URBANIZED AREAS ACCORDING TO 1970 POPULATION—Continued

State	Urbanized Area	Population	Rank	Multi-State Area
Oklahoma	Oklahoma City	579, 788	41	Ark.
	Tulsa	371, 499	59	
	Lawton	95, 687	179	
	Fort Smith	75, 517	211	Ark.
Oregon	Portland	824, 926	28	Wash.
	Eugene	139, 255	141	
	Salem	93, 284	184	
Pennsylvania	Philadelphia	4, 021, 066	4	N.J.
	Pittsburgh	1, 846, 042	11	
	Allentown/Bethlehem/Easton	363, 517	62	N.J.
	Trenton	274, 148	75	N.J.
	Harrisburg	240, 751	88	
	Wilkes Barre	222, 830	97	
	Scranton	204, 205	104	
	Erie	175, 263	114	
	Reading	167, 932	115	
	York	123, 106	154	
	Lancaster	117, 097	160	
	Johnstown	96, 146	177	
	Altoona	81, 795	198	
Rhode Island	Providence/Pawtucket/Warwick	795, 311	30	Mass.
	Fall River	139, 392	140	Mass.
South Carolina	Columbia	241, 781	87	
	Charleston	228, 399	94	
	Greenville	157, 073	124	
	Augusta	148, 953	134	Ga.
South Dakota	Sioux City	95, 937	178	Iowa-Nebr.
	Sioux Falls	75, 146	212	
Tennessee	Memphis	663, 976	37	Miss.
	Nashville/Davidson	448, 444	53	
	Chattanooga	223, 580	96	Ga.
	Knoxville	190, 502	107	
Texas	Houston	1, 677, 863	13	
	Dallas	1, 338, 684	15	
	San Antonio	772, 513	32	
	Fort Worth	676, 944	35	
	El Paso	337, 471	65	
	Austin	264, 499	78	
	Corpus Christi	212, 820	99	
	Lubbock	150, 135	132	
	Amarillo	127, 010	153	
	Waco	118, 843	158	
	Port Arthur	116, 474	161	
	Beaumont	116, 350	162	
	Wichita Falls	97, 564	176	
	McAllan/Pharr/Edenburg	91, 141	186	
	Abilene	90, 571	188	
	Texas City/La Marque	84, 054	197	
	Odessa	81, 654	199	
	Laredo	70, 197	221	
	San Angelo	63, 884	229	

RANK OF URBANIZED AREAS ACCORDING TO 1970 POPULATION—Continued

State	Urbanized Area	Population	Rank	Multi-State Area
Texas (Cont.)	Galveston	61,809	233	
	Midland	60,371	236	
	Tyler	59,781	237	
	Texarkana	58,570	239	Ark.
	Sherman/Denison	55,343	244	
	Brownsville	52,627	246	
	Bryan/College Station	51,395	247	
	Harlingen San Benito	50,469	248	
Utah	Salt Lake City	479,342	51	
	Ogden	149,727	133	
	Provo/Orem	104,110	168	
Virginia	Washington, D.C.	2,481,489	8	D.C.-Md.
	Norfolk/Portsmouth	668,259	36	
	Richmond	416,563	55	
	Newport News/Hampton	268,263	76	
	Roanoke	156,621	126	
	Petersburg/Colonial Heights	100,617	171	
	Lynchburg	70,842	219	
Washington	Seattle/Everett	1,238,107	17	
	Portland	824,926	28	Ore.
	Tacoma	332,521	66	
	Spokane	229,620	92	
West Virginia	Huntington/Ashland	167,583	116	Ky.-Ohio
	Charleston	157,662	123	
	Wheeling	92,944	185	Ohio
	Steubenville/Weirton	85,492	193	Ohio
Wisconsin	Milwaukee	1,252,457	16	
	Madison	205,457	102	
	Duluth/Superior	138,352	143	Minn.
	Appleton	129,532	150	
	Green Bay	129,105	151	
	Racine	117,408	159	
	Kenosha	84,262	196	
	La Crosse	63,373	230	Minn.
	Oshkosh	55,480	243	
Puerto Rico	Caguas	65,844		
	Mayaguez	69,558		
	Ponce	128,233		
	San Juan	820,442		

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